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## ***Beyond Setup***

### **Compaq LTE 5000 Family of Personal Computers**

Second Edition (September 1996)

First Edition (September 1995)

Part Number 213660-002

**Compaq Computer Corporation**



# Regulatory Notices

## Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

## Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Compaq Computer Corporation may void the user's authority to operate the equipment.

## Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

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## European Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

- EN55022 (CISPR 22)—Radio Frequency Interference
- EN50082-1 (IEC801-2, IEC801-3, IEC801-4)—Electromagnetic Immunity
- EN60950 (IEC950)—Product Safety

## Canadian Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

## Avis Canadien

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

## German Ergonomics Notice

The Compaq series 2880 family of personal computers, when combined with one of the Compaq family of enhanced keyboards and a QVision or FS family of desktop monitors, meets the requirements of ZH 1/.618 (German Safety Regulations for Display Work Places in the Office Sector). The installation guide included with the monitors provides configuration information.

## Japanese Notice

本装置は、第二種情報装置（住宅地域またはその隣接した地域において使用されるべき情報装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。  
しかし、本装置をラジオ、テレビジョン受信機に、近接してご使用になると、受信障害の原因となることがあります。本書の説明にしたがって正しい取り扱いをしてください。

## Airline Travel Notice

Use of electronic equipment aboard commercial aircraft is at the discretion of the airline.

## Laser Safety

All Compaq systems equipped with CD-ROM drives comply with the appropriate safety standards, including IEC 825. With specific regard to the laser, the equipment complies with laser product performance standards set by government agencies as a Class 1 laser product. It does not emit hazardous light; the beam is totally enclosed during all modes of customer operation and maintenance.

## CDRH Regulations

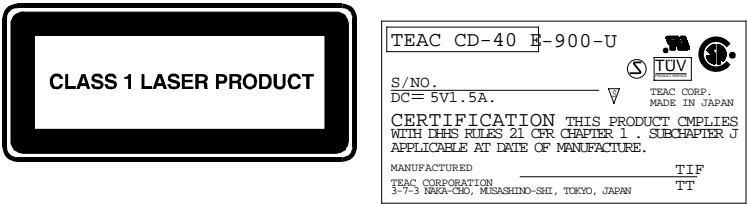
The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured from August 1, 1976. Compliance is mandatory for products marketed in the United States.



**WARNING:** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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The removable CD-ROM drive is classified as a CLASS 1 LASER PRODUCT. These labels are located on the outside of the CD-ROM drive:



## Laser Information

Laser Type: Ellipse  
Wave Length: 780 nm +15/- 10 nm  
Divergence Angle: 10 (vertical) /36 (horizontal) degrees  
Output Power: 0.7 mW to 2.5 mW  
Polarization: Circular  
Numerical Aperture:  $0.45 \pm 0.04$

Only authorized technicians trained by Compaq should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard.

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# Before You Begin

## Where to Find Information

This *Beyond Setup* guide and the online *User's Guide* should answer most questions that you may have about your new Compaq personal computer and the preinstalled Windows 95 operating system.

You can access the online *User's Guide* in two ways: (1) click the Start button, point to Compaq Information Center, then click *User's Guide*, or (2) click the Start button, then click Help.

In addition to this *Beyond Setup* guide and the online *User's Guide*, the following Compaq printed and online references are supplied with the computer to provide information about specific topics:

- *Quick Setup* (printed card to get you started in seven easy steps)
- *Caring for Removable Drives* (printed reference card)
- *Compaq Dictionary* (online dictionary of computer terms)
- *Safety & Comfort Guide* (printed and online guide to help you create a comfortable work environment)

## Symbols and Conventions Used in This Guide

The following format conventions distinguish elements of the text throughout this guide:

- Key names appear in a boldfaced type looking very much the way they appear on the keyboard. For example, **Home**, **End**, **Backspace**, and **Tab**.
- When keys must be pressed at the same time, the action is represented by the key names and the plus (+) symbol. For example, **Ctrl+Alt+Delete**.
- Drive letters that are not in command lines are presented in uppercase type as shown here: drive A.
- Folder (directory) names that are not in command lines are presented in uppercase type as shown here: DIRECTORY.

- File names that are not in command lines are presented in uppercase italic type as shown here: *FILENAME*.
- Commands are presented in lowercase, bold type as shown here: **install** or **a:\install**. Commands that are to be entered at the command prompt may be shown on a separate line.
- When you need to type information *and* press the **Enter** key, you are directed to "enter" the information.
- When you need to type information *without* pressing the **Enter** key, you are directed to "type" the information.

The following words and symbols mark special messages throughout this guide:



**WARNING:** Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.



**CAUTION:** Text set off in this manner indicates that failure to follow directions in the caution could result in damage to equipment or loss of information.

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**IMPORTANT:** Text set off in this manner presents clarifying information or specific instructions.

**NOTE:** Text set off in this manner presents commentary, sidelights, or interesting points of information.

## Compaq Support

For customer support or to order backup diskettes of the preinstalled software, call one of the telephone numbers on the following pages to locate your nearest Compaq authorized dealer, reseller, or service provider.

**NOTE:** If you take the computer in for service, remember to furnish your power-on and setup passwords to the service provider or to disable your passwords.

## Preparing for a Technical Support Call

If you cannot solve a problem using the troubleshooting tips in Chapter 13 and the online Troubleshooting help, you may need to call technical support. To receive the fastest possible solution when you call, follow the instructions in Chapter 12 to run Compaq Diagnostics and have the following available when you call:

- The computer
- Serial number, on the back of the computer behind the connector door above the serial connector
- Purchase date on invoice
- Conditions under which the problem occurred
- Error messages that occurred
- Hardware configuration
- Type of printer connected
- Hardware and software you are using
- Your Windows 95 product identification number (PIN). To locate the PIN number, click the Start button, point to Settings, click Control Panel, double-click the System icon, then click the General tab. Your PIN number is below your name.
- The printed error message log from Computer Checkup (TEST), or a list of the devices and error messages received
- Contents of View System Information (INSPECT), as well as the *CONFIG.SYS* and *AUTOEXEC.BAT* files

## Ordering Backup Diskettes

It is recommended that you create a backup of the preinstalled software as described in Chapter 1. However, for an additional cost, you can order backup diskettes from Compaq. Before calling to order, be sure to have the computer serial number available. The serial number is on the back of the computer behind the connector door above the serial connector.

**NOTE:** If an order form was included with the computer, complete the form and return it or call one of the numbers listed on the order form.

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## Worldwide Telephone Numbers

Locate your geographical area from the following table and use one of the telephone numbers for Compaq assistance.

**General Information Numbers:**—Product information, technical assistance, and the location of your nearest Compaq authorized dealer, reseller, or service provider.

**Technical Support Numbers:**—Hardware technical support in analyzing system configuration and diagnostic problems or troubleshooting.

**Customer Support Numbers:**—Information on service and support programs including warranty, product catalogs, and white papers.

**PaqFax Numbers:**—Automatic facsimile response system for technical and product specific information that is transmitted to any fax machine. PaqFax is available 24 hours a day.

**NOTE:** Telephone numbers are subject to change without notice.

Worldwide Telephone Numbers		
Location	Country Code	Telephone Number
<b>Argentina</b>		
General Information	+54	-1-796-1616
Technical Support	+54	-1-796-1717
<b>Australia</b>		
General Information		61-2-9911-1999
Technical Support		61-2-9911-1955
PaqFax		61-2-9911-1982
<b>Austria</b>		
General Information		0222/8 78-16 16
Technical Support		0222/8 78-16-16
Ordering Backup Software	+31	-55-38-43-39

Worldwide Telephone Numbers *Continued*

Location	Country Code	Telephone Number
<b>Belgium</b>		
General Information	+32	-2-716-95-11
Compaq Care Center	+32	-2-716-96-96
Compaq Care Center Fax	+32	-2-716-95-85
General Fax	+32	-2-725-22-13
FaxPaq	+32	-2-716-96-99
QuickLine	+32	-2-716-95-92
Ordering Backup Software	+32	-2-716-96-78
Ordering Backup Software Fax	+32	-2-716-96-79
<b>Brazil</b>		
General Information		55-11-246-7866
<b>Canada</b>		
General Information		1-905-707-1715
Technical Support		1-800-OKCOMPAQ (1-800-652-6672)
Customer Support		1-800-263-5868
Ordering Backup Software		1-800-952-7689
Battery Pack Recycling		1-800-263-5868
<b>Caribbean</b>		
General Information		011-713-514-4220
Technical Support		011-713-518-2200
<b>Chile</b>		
General Information		56-2-274-1911
Technical Support		56-2-274-3007
<b>China</b>		
General Information		861-849-2928
Technical Support		861-849-2913
<b>Colombia</b>		
General Information		57-1-312-0201
Technical Support		57-1-345-0266



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**Worldwide Telephone Numbers** *Continued*

<b>Location</b>	<b>Country Code</b>	<b>Telephone Number</b>
<b>Czech Republic</b>		
General Information	+42	-2-232-8772
Technical Support	+42	-2-232-8772
<b>Denmark</b>		
General Information	+45	-45-90-45-90
Technical Support	+45	-45-90-45-45
<b>Finland</b>		
General Information	+358	-0-615-599
Technical Support		9800-206-720
QuickLine (BBS)	+358	-0-6155 9870
<b>France</b>		
General Information	+33	-1-41-33-41-33
Technical Support	+33	-1-41-33-44-55
<b>Germany</b>		
	(0,12 DM/2 sec. or 3,60 DM/min.)	
Menu Selection		0190/88 80 80
Notebook Hotline		0190/88 80 82
	(0,48 DM/min.)	
QuickLine		0180/5 21 21 18
FaxPaq		0180/5 21 21 19
<b>Hong Kong</b>		
General Information		852-28681382
Technical Support		852-90116633
PaqFax		852-28671648
<b>Hungary</b>		
General Information	+36	-1-201-8776
Technical Support	+36	-1-201-8776
<b>India</b>		
General Information		91-80-559-6023
PaqFax		91-80-559-8989
BBS		91-80-559-8900

Worldwide Telephone Numbers *Continued*

Location	Country Code	Telephone Number
<b>Italy</b>		
General Information	+39	-2-57-59-03-61
Technical Support	+39	-2-57-59-03-00
Customer Support	+39	-1-67-82-50-12
<b>Japan</b>		
General Information		0120-101-589
Technical Support		0120-101-589
Windows 95 Support		0120-505-589
Ordering Backup Software		0120-250-589
FaxStation		81-3-5402-0991
<b>Korea</b>		
General Information		82-2-3470-07001
Technical Support		82-2-523-3575 82-082-902-77774
<b>Malaysia</b>		
General Information		603-717-1188
Technical Support		603-718-1636
<b>Mexico</b>		
General Information		1-525-229-7900
Technical Support		1-525-229-7910
PaqFax		1-525-229-7920
<b>Netherlands</b>		
General Information		0182-565805
Customer Support		06-91681616 (Dfl. 0.75/min)
Fax		06-8991116 (Dfl. 0.40/min)
QuickLine Bulletin Board		0182-572366
<b>New Zealand</b>		
General Information		64-9-307-3969
<b>Norway</b>		
General Information	+47	-22-07-20-00
Technical Support	+47	-22-07-20-20

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## Worldwide Telephone Numbers *Continued*

Location	Country Code	Telephone Number
<b>Poland</b>		
General Information	+48	-2-630-3535
Technical Support	+48	-2-630-3535
<b>Portugal</b>		
General Information	+351	-1-4120132
Technical Support	+351	-1-4120132
<b>Singapore</b>		
General Information		65-753-6688
Customer Support Center		65-750-3030
PaqFax		65-750-4514
<b>South Africa</b>		
General Information		27-11-728-6999
Technical Support		27-11-728-6999
<b>Spain</b>		
General Information	+34	-1-640-1500
Technical Support	+34	-1-640-1302
<b>Sweden</b>		
General Information	+46	-8-703-5240
Technical Support	+46	-8-703-5240
PaqFax (hämtfax)	+46	-8-703-5225
QuickLine (BBS)	+46	-8-703-5220
<b>Switzerland</b>		
Technical Support		157/64-00
QuickLine Bulletin Board		01/8 38-24 21
Ordering Backup Software		155/62-06
PaqFax		01/8 38-22 38

Worldwide Telephone Numbers *Continued*

Location	Country Code	Telephone Number
<b>Taiwan</b>		
General Information		886-2-7351000
Technical Support		886-2-3761170
BBS		886-2-3761175
<b>Thailand</b>		
General Information		62-2-679-6222
<b>United Arab Emirates (Dubai)</b>		
General Information	+97	14 -818100
<b>United Kingdom</b>		
General Information		0990-134456
FaxPaq		0181-332-3550
QuickLine Bulletin Board		0181-332-9499
<b>United States</b>		
General Information		1-713-514-6864
Technical Support		1-800-OKCOMPAQ (1-800-652-6672)
Customer Support		1-800-345-1518
PaqFax		1-800-345-1518, Option 1
Download Facility (modem access only)		1-713-518-1418
Ordering Backup Software		1-800-952-7689
Battery Pack Recycling		1-800-524-9859
<b>Venezuela</b>		
General Information		58-2-953-6944

# Taking a Look at the Computer

This chapter provides an overview of the computer features and components. Illustrations and tables identify external components and give a brief description of their functions.

All models of the computer include the following features:

- Intel Mobile Pentium processor
- 8 or 16 megabytes DRAM memory (expandable up to 72 or 80 megabytes, respectively)
- 256 Kbytes of Level 2 cache memory
- True 64-bit system architecture
- Upgradable flash ROM BIOS
- High-performance PCI bus graphics with hardware-assisted motion video acceleration (MVA)
- Keyboard with built-in pointing device and mouse buttons
- Removable hard drive in a dedicated hard drive bay
- MultiBay that supports a CD-ROM drive, second hard drive, diskette drive, second battery pack, or weight saver
- One Type III PC Card (PCMCIA) slot that supports one Type III card or any combination of two Type II and Type I cards
- Infrared port and software that supports wireless IrDA or cable links for file transfer, file synchronization, and printing
- Built-in speakers, microphone, and jacks for Sound Blaster Pro compatible stereo sound
- Energy Star compliant power saving features
- Ports and connectors for external equipment, including serial, parallel, external monitor, and an external PS/2 pointing device, keyboard, or numeric keypad
- Desktop functionality with the optional MultiBay Expansion Base that has two MultiBays, two Type III PC Card slots, Ethernet RJ-45 and BNC connectors, a MIDI/game port.
- Support for MultiBay Expansion Base
- MultiBay-ISA Expansion Base
- Support for MultiBay-ISA Expansion Base that has all the features of the MultiBay Expansion Base plus full-length ISA slot and Premier Sound audio
- Support for the optional MPEG and TV Video Adapter, which can be connected to the undocked computer, or to either expansion base when the computer is docked.

## Preinstalled Software

The Windows 95 operating system is preinstalled on the computer hard drive.

MS-DOS real mode drivers are also preinstalled, which load if you have older MS-DOS based programs or games that require an MS-DOS real mode session. Refer to the online Readme file for more information. Click the Start button, point to Programs, point to MS-DOS Real Mode, then click Readme.

**NOTE:** Computer Setup and Compaq Diagnostics are not on the computer hard drive. Computer Setup is in the system BIOS, and the Compaq Diagnostics utilities are on diskette. Refer to Chapter 10, "Running Computer Setup," for information about setting up your computer and Chapter 11, "Running Compaq Diagnostics," for information about running diagnostic utilities.

## Backing Up the Preinstalled Software

Compaq recommends that you create a backup of the preinstalled software. For online backup instructions, click the Start button; point to Programs, Accessories, System Tools; and click Backup. In Backup, click the Help menu, Help Topics, and the Index tab. Find and display the instructions for the topic "system, backing up."

If you prefer, you can order backup diskettes for an additional cost. To order, refer to the Worldwide Telephone Numbers listed in the Preface of this guide. Or, if an order form was included with your computer, complete the form and return it or call one of the numbers listed on the form.

## Reinstalling Drivers if You Delete the Preinstalled Software

If you reconfigure the hard drive and install your own MS-DOS and/or Windows operating environment, you will need to reinstall some device drivers to regain full functionality of the computer. Call one of the worldwide telephone numbers listed in the Preface of this guide for information about ordering the drivers kit. When ordering, ask for the Compaq LTE 5000 Drivers Kit for Windows 95.

## Interior Components

Interior components vary by model, and some components are upgradable. To view information about your system components, double-click the System icon in Control Panel or run the View System Information (INSPECT) utility from the Compaq Diagnostics diskette. Refer to Chapter 11, "Running Compaq Diagnostics," for more information about running the View System Information utility.

### Memory

The computer has an upgradable flash ROM BIOS. ROM (read only memory) is permanent memory in a chip on the computer system board. BIOS (Basic Input/Output System) is software in ROM that provides basic functionality for the computer.

The computer has 256 or 512 Kbytes of cache memory, depending on the model. Cache memory is high-speed memory that stores the most recently used information in anticipation that it will be needed again by the microprocessor. This high-speed transfer of information improves overall system performance.

The base amount of random access memory (RAM) in the computer is either 8 megabytes or 16 megabytes, depending on the model. You can view the amount of RAM memory either by running Computer Setup or by double-clicking the System icon in Control Panel, then clicking the General tab.

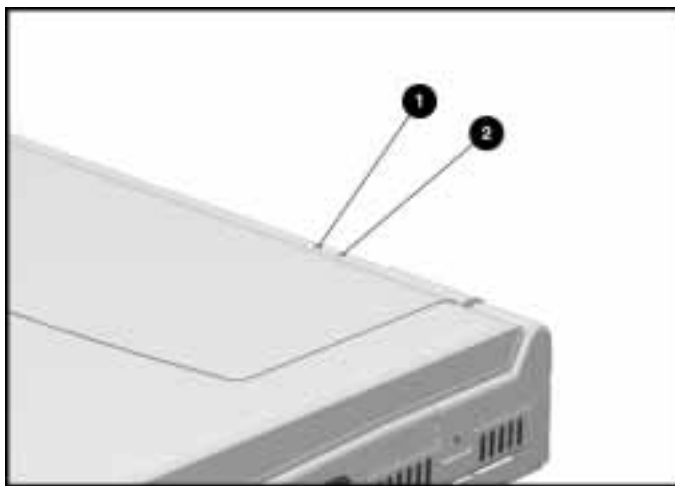
RAM is where the computer temporarily stores open files and program information and carries out commands. Information in RAM that has not been saved to a storage medium, such as the hard drive, is lost when power to the computer is turned off.

### Increasing RAM Memory

You can increase the amount of RAM memory by adding a memory expansion board, available in 8, 16, 32, and 64 megabyte sizes. Refer to Chapter 9, "Installing an Optional Memory Expansion Board," for procedures to add a memory expansion board.

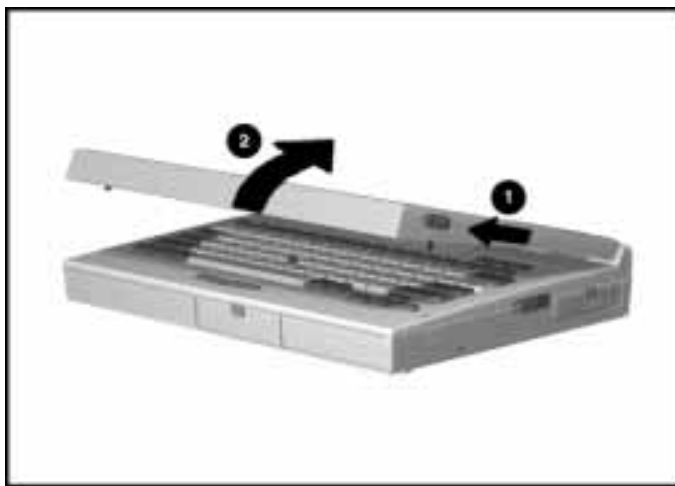
## Exterior Components

The green power/suspend light ❶ and the yellow battery light ❷ are visible whether the computer is opened or closed.



*Power/Suspend Light and Battery Light on the Computer*

Slide the release latches forward ❶ and open the display ❷ to see all the components on the front of the computer.

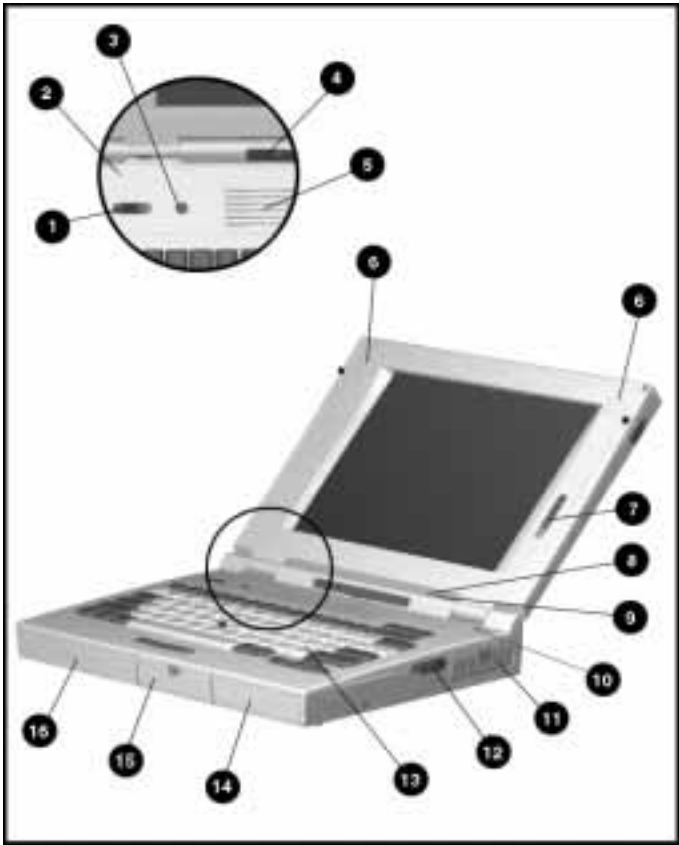


*Opening the Computer*



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## Components on the Front and Right Side



*Front and Right Side View*

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### Components on the Front and Right Side








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Component	Function
❶ Power switch	Turns the power on and off.
❷ Display switch	Turns display off if display is closed when the computer is on.
❸ Suspend button	Initiates and exits Suspend. When pressed simultaneously with the <b>Fn</b> key, initiates Hibernation. Refer to Chapter 3, "Basic Operating, Maintenance, and Travel Guidelines".

*Continued*

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**Components on the Front and Right Side** *Continued*

Component	Function
④ Status panel icons	<div> The computer is connected to an external power source.</div> <div> QuickLock/QuickBlank has been initiated. Type your power-on password on the blank screen to exit QuickLock/QuickBlank.</div> <div> Power management is turned on. Refer to Chapter 10, "Running Computer Setup," for information about power management.</div> <div> A diskette drive in the MultiBay is being accessed.</div> <div> A hard drive in the dedicated hard drive bay or a hard drive or CD-ROM drive in the MultiBay is being accessed.</div> <div> An external monitor is actively displaying information.</div> <div> The built-in speakers on the front of the display or speakers or headphones connected to the computer or either expansion base are turned on.</div> <div><div>1</div> Num Lock is on, which enables the embedded numeric keypad.</div> <div><div>A</div> Caps Lock is on, which causes new text to be typed in uppercase letters.</div> <div><div>↓</div> Scroll Lock is on, which causes the cursor to scroll by fields instead of by lines.</div>

*Continued*

.....

## Components on the Front and Right Side *Continued*

Component	Function
5 Ventilation intake	The ventilation intake, along with the exhaust, provides airflow that helps prevent the computer from overheating.
6 Stereo speakers	Built-in stereo speakers for PC sounds and the multimedia sound system.
7 Brightness control	Adjusts the brightness of the display.
Contrast control (not shown)	Adjusts the contrast of the display (not on all models).
8 Power/suspend light	Green light turns on when power to the computer is turned on; turns off when power to the computer is turned off; blinks when the computer is in Suspend.
9 Battery light	Yellow light turns on when a battery pack in the computer is charging; turns off when battery pack completes fast charging; blinks to indicate a low-battery condition.
10 Microphone	Built-in microphone for the multimedia sound system.
11 PC Card slots	Accepts one Type III or any combination of two Type II and Type I PC Cards (PCMCIA).
12 Battery release	Releases a battery pack in the battery compartment so that it can be removed.
13 Keyboard	Keyboard with EasyPoint II pointing device and mouse buttons. Refer to Chapter 2, "Keyboard and EasyPoint II Pointing Device," for information on the keyboard and integrated pointing device.
14 Battery compartment	Dedicated battery compartment for the main battery pack.
15 Hard drive bay	Dedicated hard drive bay.
16 MultiBay	Bay that supports multiple devices: a CD-ROM drive, hard drive, diskette drive, or battery pack.

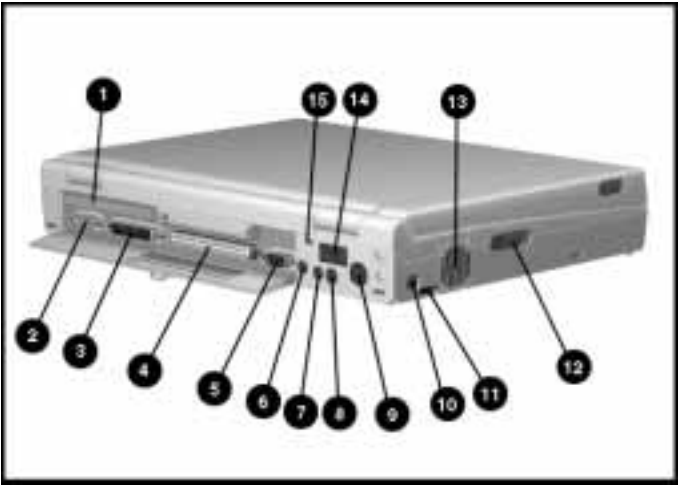
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# Components on the Rear and Left Side

Pull open the connector door on the rear panel to see all the external connectors on the rear of the computer.



*Opening the Connector Door on the Rear Panel*



*Rear and Left Side View*

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Component	Function
❶ Serial number	You will need this serial number whenever you call for customer support.
❷ Serial connector	Connects optional serial devices.
❸ Parallel connector	Connects optional parallel devices.
❹ External options connector	Connects either expansion base or the optional MPEG and TV Video Adapter.
❺ External monitor connector	Connects an external monitor.
❻ Power connector	Connects the AC Adapter or the optional Automobile Adapter.
❼ Stereo speaker/headphone jack	Connects external speakers or headphones.
❽ Stereo line-in jack	Stereo line-in for devices such as CD player, tape deck, or tuner.
❾ Keyboard/mouse connector	Connects an external keyboard, numeric keypad, PS/2 mouse, or other pointing device.
❿ Mono microphone jack	Connects a powered electret condenser microphone.
⓫ Volume control	Controls volume to the built-in speakers or to external speakers or headphones connected to the computer or either expansion base.
⓬ MultiBay device release	Releases a drive or battery pack in the MultiBay.
⓭ Ventilation exhaust	The ventilation exhaust, along with the intake, provides airflow that helps prevent the computer from overheating.
⓮ Infrared port	Transfers data to another computer or external device that accepts the IrDA format.
⓯ Security slot	Provision for an optional security cable lock to be attached to the computer.

# Keyboard and EasyPoint II Pointing Device

The computer keyboard has separate pointer and screen-control keys, an embedded numeric keypad, special hotkeys for quick access to certain functions, a palm rest, and an integrated pointing device and mouse buttons.



**WARNING:** To reduce risk of serious injury to hands, wrists, or other joints, read the *Safety & Comfort Guide*.

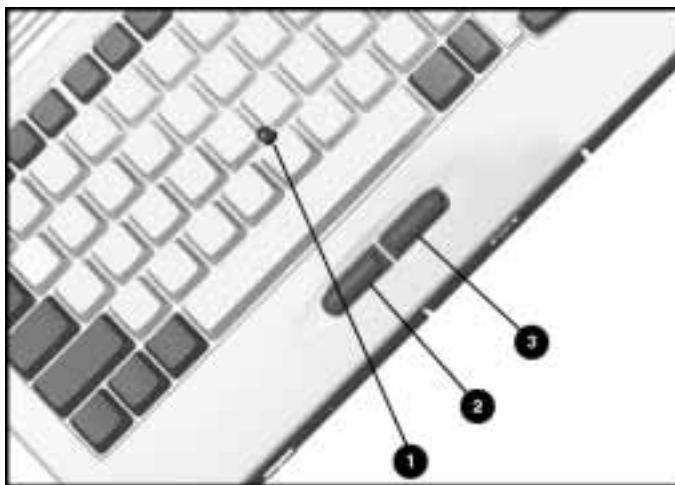
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## EasyPoint II Pointing Device and Mouse Buttons

The integrated EasyPoint II pointing device provides mouse functions in all software that supports a Microsoft-compatible mouse. The pointing device ❶ is located on the keyboard between the letters G, H, and B. The pointing device is easy to use with your left or right index finger and eliminates the need to take your hand from the keyboard to move the pointer. Apply light pressure in any direction to move the onscreen pointer.

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The left ② and right ③ mouse buttons are below the spacebar. The mouse buttons are easily pressed with your left or right thumb.



*EasyPoint II Pointing Device and Mouse Buttons*

**NOTE:** If an external pointing device is connected, the integrated pointing device is automatically disabled and the external pointing device must be used.

## Customizing the Pointing Device

To customize the pointing device and mouse button settings, click the Windows Start button, point to Settings, click Control Panel, then double-click the Mouse icon.

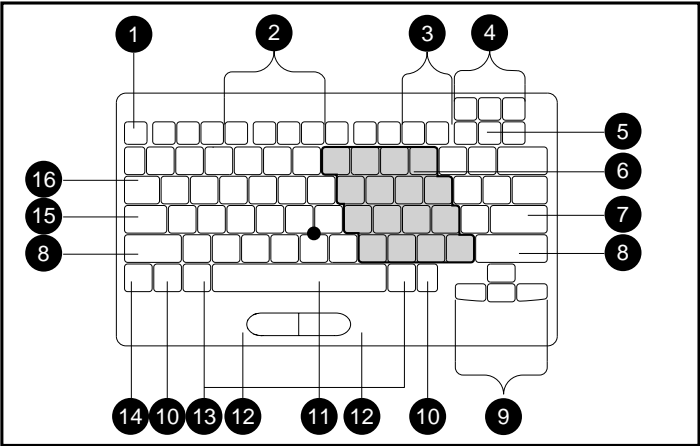
## Replacing the Pointing Device Cap

A spare pointing device cap is supplied with the computer. If you need to replace the cap, pull up gently to remove the cap. If the white plastic cap underneath also detaches, replace the white cap and then place the supplied cap over it.

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# Identifying Keyboard Features

The illustration and table below identify the keyboard features, including the embedded numeric keypad and the special hotkeys.



*Identifying Keyboard Features*

Keyboard Features	
1 Esc key	9 Pointer keys
2 Hotkeys	10 Ctrl key
3 F11 and F12 function keys	11 Spacebar
4 Screen control keys	12 Palm rest
5 NumLk key	13 Alt key
6 Embedded numeric keypad (shaded)	14 Fn (function) key
7 Enter key	15 Caps lock key
8 Shift key	16 Tab key



## Using the Embedded Numeric Keypad

The embedded numeric keypad is a section of the main keyboard that converts to a numeric keypad when the NumLk function is enabled. When the NumLk function is enabled, the blue numbers and symbols within the numeric keypad section are active.

- To enable the embedded numeric keypad, press **Fn+NumLk**. The NumLk icon turns on.
- To disable the embedded numeric keypad, press **Fn+NumLk**. The NumLk icon turns off.

When working in MS-DOS mode, you can enable the disabled embedded numeric keypad by pressing and the embedded number.

## Using Text Stretch

When running MS-DOS under Windows, the image on the computer display may not fill the screen.

To stretch text so that it fills more of the screen, use the **Fn+T** keys. Toggle these keys to switch between stretched text mode and regular mode.

**NOTE:** On an 800 x 600 display, only text is stretched. On a 1024 x 768 display, both text and graphics can be stretched.

## Hotkeys

Hotkeys are key combinations for performing functions quickly. A Hotkey combination is a function key pressed simultaneously with the **Fn** key. Because hotkeys include the **Fn** key, they are available only from the computer keyboard. Each function key that can be used as a hotkey has an icon on it that represents the function that hotkey performs.

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The following hotkeys are available:

Hotkeys	
Key	Function
<b>Fn+F4</b>	Switches between external, internal, and simultaneous display. (Model 810 CSTN 800 × 600 does not support simultaneous display.)
<b>Fn+F5</b>	Toggles speakers/headphones off and on.
<b>Fn+F6</b>	Turns QuickLock/QuickBlank on. Power-on password is needed.
<b>Fn+F7</b>	Toggles power management settings off and on.

### Fn+F4

The display hotkey is available when the computer is connected to an external monitor. Press the **Fn+F4** hotkey to switch between an external monitor, the internal computer screen, and simultaneous display (both screens). The display hotkey does not switch from the external monitor if the setting for screen resolution or number of colors is different from that for the internal display. Refer to Chapter 5, "Connecting External Desktop Equipment," for information about display settings.

**NOTE:** Model 810 CSTN 800 × 600 switches between the external monitor and the internal computer display only; it does not support simultaneous display.

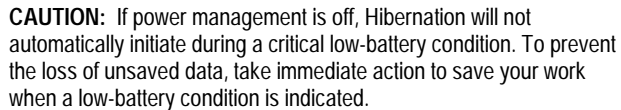
### Fn+F5

The speaker/headphone hotkey toggles off and on the built-in speakers or external speakers or headphones connected to the speaker jack. The speaker icon on the status panel appears when the speakers/headphones are turned on and disappears when the speakers/headphones are turned off. Turning off the speakers/headphones turns off the warning beeps for a low-battery condition.

[illegible]

To use the QuickLock/QuickBlank hotkey, you must first establish a power-on password and enable QuickLock/QuickBlank in Computer Setup. Refer to Chapter 10, "Running Computer Setup," for information about setting up your computer.

The power management hotkey temporarily toggles off and on power management settings. (When you restart the computer, the setting in Power Properties takes effect.) The power management icon on the status panel appears when power management is turned on and disappears when power management is turned off. Refer to Chapter 10, "Running Computer Setup," for information about power management settings and Windows Power Properties.



# Basic Operating, Maintenance, and Travel Guidelines

This chapter contains basic guidelines for operating and caring for the computer and for traveling with or shipping the computer.

## Power Sources

You can power the computer by connecting it to an external power source or by using battery packs. Refer to Chapter 4, "Using Battery Packs," for information on battery packs.

### Connecting to an External Power Source

Connect to an external power source to charge battery packs in the computer and/or to ensure that critically important work is not interrupted by a low-battery condition.

An external power source can be the AC Adapter, the optional Automobile Adapter, or one of the expansion bases. Refer to Chapter 5, "Connecting External Desktop Equipment," for information on using the computer with the expansion bases.



**CAUTION:** Do not attempt to power the computer with a converter kit that is intended for use with appliances.

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## Connecting the AC Adapter

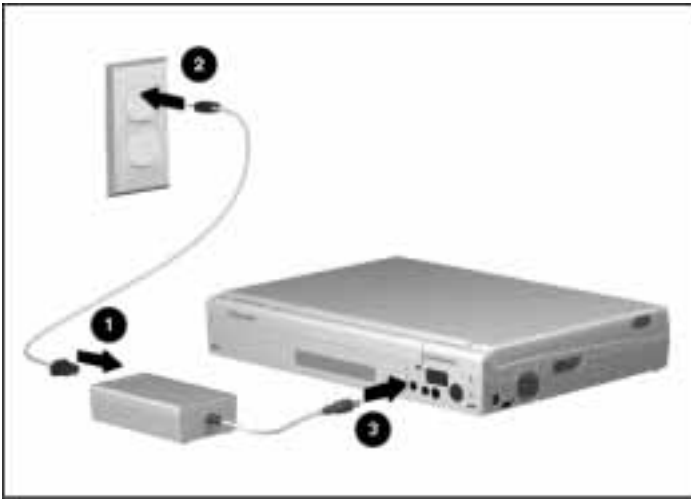
Follow these steps to connect the computer to an external power source using the AC Adapter:



**CAUTION:** Be sure that the electrical outlet into which you plug the AC Adapter is easily accessible at all times. When you want to disconnect power from the computer, unplug the AC Adapter from either the computer or the electrical outlet.

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1. Connect the power cord to the AC Adapter ❶.
2. Plug the other end of the power cord into an electrical outlet ❷.
3. Connect the AC Adapter to the power connector on the rear panel of the computer ❸.



*Connecting the AC Adapter*

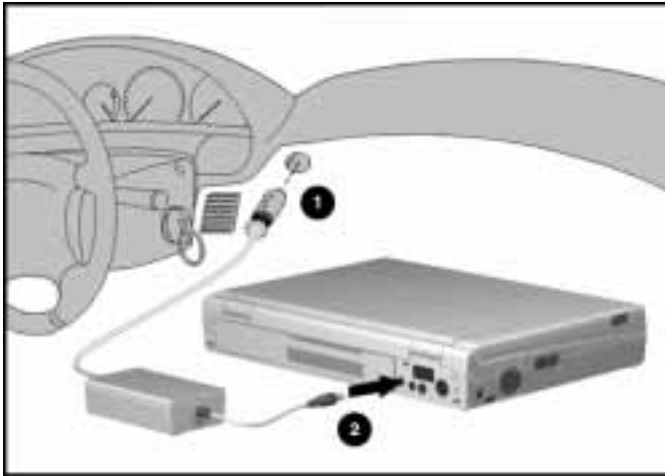
**NOTE:** It is normal for the AC Adapter to feel warm when being used.

## Connecting the Automobile Adapter

Follow these steps to connect the computer to an external power source using the optional Automobile Adapter:

1. Insert the larger connector on the Automobile Adapter cable into the cigarette lighter socket **①**.
2. Insert the smaller connector on the Automobile Adapter cable into the power connector on the rear panel of the computer (same connector that the AC Adapter connects to) **②**.

**NOTE:** Charging the computer battery pack when the vehicle's engine is turned off can drain the car battery.



*Connecting the Automobile Adapter*

## Disconnecting from an External Power Source

If a charged battery pack is in the computer, you do not have to turn off the computer to disconnect the AC Adapter or Automobile Adapter. The computer power system automatically switches to battery power when the computer is disconnected. Refer to Chapter 5, "Connecting External Desktop Equipment," for information about undocking from the expansion bases.

**IMPORTANT:** If the computer will be unused and disconnected from an external power source for more than two weeks, remove the battery pack(s). This will reduce the discharge rate and extend the battery life.

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# Power Controls

The power switch and other power controls initiate various actions depending on the power state of the computer, as described in the following table.

Power Controls	
Control	Action
Power switch	Turns computer on when it is off, in Suspend, or Hibernation. Turns computer off when it is on.
Suspend button	Initiates Suspend when computer is on. Turns computer on when it is off, in Suspend, or Hibernation.
<b>Fn+</b> Suspend button	Initiates Hibernation when computer is on. Exits Suspend when computer is in Suspend.
Display switch + Suspend button	Restarts the system.

## Turning On the Computer

After you have connected the computer to an external power source or inserted a charged battery pack, turn on the computer by sliding the power switch to the right and releasing it or by pressing the Suspend button. The green power/suspend light is illuminated. (The power/suspend light blinks when the computer is in Suspend.)

If you are using an external power source, the power icon on the status panel turns on. If battery pack(s) are in the computer, the battery gauge icon(s) on the status panel are illuminated. The battery gauge icons indicate the amount of charge in battery pack(s).

Whenever the computer is on or in Suspend, be sure the ventilation intake and exhaust are both clear of any obstructions.



**CAUTION:** Be sure that the ventilation intake and exhaust are not blocked when the computer is on. If the vents are blocked, the computer may overheat and unexpectedly initiate Suspend (or turn off when docked).





- Clean the lens of the CD-ROM drive occasionally with a commercially available dry-type cleaning kit (not a wet-type kit). Follow the directions in the kit to insert the cleaning cartridge into the CD-ROM drive.

## Traveling and Shipping Guidelines

For safety and convenience, follow these steps when traveling with or shipping the computer:

1. Back up all important hard drive files onto diskettes or tape media. When traveling, take an extra backup copy of the data with you.
2. Remove any PC Card, diskette, or compact disc that is in the computer.
3. Shut down the computer and turn external devices off.
4. Disconnect all external devices from the computer.
5. Close the display and all exterior doors on the computer.
6. Disconnect the AC Adapter from the computer. When traveling, take the AC Adapter or an extra fully charged battery pack with you.
7. Secure drives in the computer bays with the security screws that were supplied with the computer.
8. After removing a CD-ROM drive or a diskette drive, immediately place it into the MultiBay device carrying case.

### Air Travel

- Hand-carry the computer with you in the slipcase; do not check it with your luggage.
- Check with the airline if you plan to use the computer on the plane. In-flight computer use is permitted at the discretion of the airline.
- You can send your computer and diskettes through an airport x-ray machine; it will not harm the computer or diskettes.

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**IMPORTANT:** There are three types of airport security devices: X-ray machines (the conveyor belt device you set your bags on), magnetic detectors (the device you walk through), and security magnetic wands (the hand-held device used by security personnel). You can send your computer and diskettes through airport X-ray machines. However, Compaq recommends that you do not send your computer and diskettes through airport magnetic detectors or expose them to security magnetic wands.

## International Travel

- Check local customs regulations.
- Purchase a power cord from a Compaq authorized dealer or reseller for the country where you will be using the computer. These cords are designed to meet the voltage, frequency, and plug configuration requirements of each country. Do not attempt to power the computer with a converter kit that is intended for use with appliances.
- Be sure that you have the correct modem for the country you will be visiting. Telephone line standards and protocols differ from country to country.

## Shipping

- Follow the same steps to prepare the computer for shipping that you do for traveling.
- Pack the computer and external devices in their original packing boxes or similar boxes with sufficient packing material to protect them.

## Using Battery Packs

This chapter contains guidelines for using, storing, and recycling battery packs.

A nickel metal hydride battery pack is supplied with the computer. You can power the computer with the battery pack in the battery compartment and/or in the computer MultiBay. A lithium ion battery pack is available as an option.

The average operating time is over 2 hours for one battery pack (either NiMH or lithium ion) using the Advanced setting in Power Management. When two battery packs are installed, the computer consumes power simultaneously from both battery packs.



**WARNING:** To reduce the risk of injury or damage to the battery pack, do not crush, puncture, or incinerate the battery pack or short the metal contacts. Do not attempt to open or service the battery pack.

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## Extending Battery Pack Operating Time

Battery operating time varies depending on the system components, options, and applications in use. You can get the maximum operating time from battery packs by:

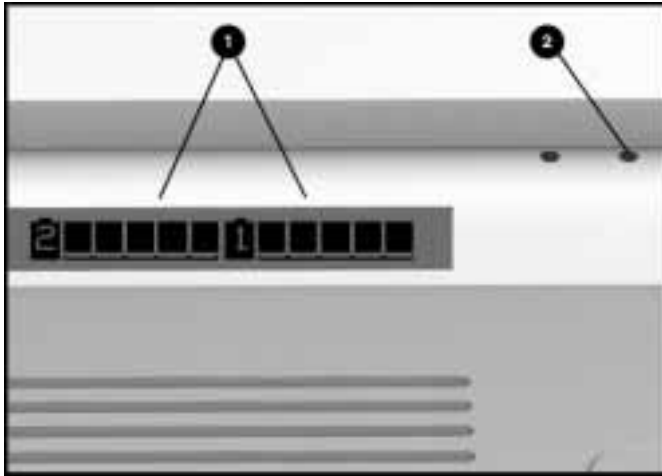
- Run the battery until you receive the first low-battery warning.
- Selecting the High level of Power Management in Computer Setup and the Advanced (default) setting in Windows Power Properties. Refer to Chapter 10, "Running Computer Setup," for information about power management and computer setup.)
- Initiating Suspend or Hibernation or turning the computer off when you are not using it.
- Reducing the brightness on the display and selecting a shorter screen timeout.
- Disconnecting any external equipment that does not have its own power source. External equipment that is powered by the computer drains the battery pack.
- Exiting modem programs when not in use.

- Removing PC Cards or turning the power off to PC Card slots (through Computer Setup) when they are not being used. PC Cards may drain the battery more quickly than expected, even when the computer is in Suspend.
- Disabling PC Card slots in Computer Setup when PC Cards are not being used.
- Connecting to an external power source when formatting diskettes.
- Minimizing the use of DOS-based programs.
- Minimizing the use of the CD-ROM drive.
- Keeping a battery pack in the computer when it is connected to external power. This maintains the full charge by supplying a constant trickle charge to the battery pack.
- Storing the battery pack in a cool, dry place. The recommended storage temperature range for the battery pack is from -4°F to 86 °F (-20°C to 30°C). High temperatures cause a battery pack to lose its charge more quickly and reduce battery pack life.

## Battery Gauge Icons and Battery Light

There are two battery gauge icons ❶ on the right side of the status panel. The Battery 1 icon appears when a battery pack is inserted into the battery compartment. The Battery 2 icon appears when a battery pack is inserted into the computer MultiBay.

The yellow battery light ❷ is above and to the right of the status panel. The battery light turns on when a battery pack in the computer is charging, turns off when the battery pack is fully charged, and blinks when the computer enters a low-battery condition. If two battery packs are in the computer, a low-battery condition occurs when both packs are near the end of their charge.



*Battery Gauge Icons and Battery Light*

The above illustration shows two fully charged battery packs in the computer. As the amount of charge in the battery packs decreases, the number of squares above the straight line in the battery icon decreases.

**NOTE:** If two battery packs are in the computer, the Windows battery meter (in Power Properties and on the taskbar) shows the averaged amount of charge for both battery packs.

## Enhancing Battery Gauge Accuracy

To enhance battery gauge accuracy:

- Do not recharge a new battery pack until it has fully discharged.
- If a battery pack has been out of a battery compartment for more than 30 days, fully charge it before using it.
- At least once every 30 days, condition a battery pack by fully charging, fully discharging, then fully recharging it.

**NOTE:** To increase the rate of discharge, press the **Fn+F7** hotkey to turn Power Management off. After discharging the battery pack, be sure to press the **Fn+F7** hotkey again to turn Power Management on.

## Identifying and Resolving a Low-Battery Condition

When battery pack(s) are near the end of their charge, the computer beeps once every 15 seconds and the battery light blinks to indicate a low-battery condition.

**NOTE:** If you disable the low-battery warning beeps in Computer Setup, only the blinking battery light (and Windows warning message if enabled) will indicate a low-battery condition.

You have approximately five minutes to save any open files and resolve the low-battery condition before the computer reaches the critical low-battery condition.

To resolve a low-battery condition, save your work immediately and then take one of the following steps:

- Initiate Suspend and replace the discharged battery pack(s) with fully charged battery pack(s) as described in this chapter.
- Connect to an external power source to charge the battery pack(s) in the computer.
- Initiate Hibernation or shut down the computer until a power source is available.

If the low-battery condition is not resolved, after five minutes the computer reaches the critical low-battery condition. The computer then beeps five times, initiates Hibernation (if you have not disabled it), and saves information in memory to a Hibernation file.

If you have disabled Hibernation in Computer Setup and the computer reaches a critical low-battery condition, it initiates Suspend, then shuts down when the battery pack fully discharges. If you have turned off or disabled power management, the computer shuts down when it reaches the critical low-battery condition.



**CAUTION:** If you have disabled Hibernation or turned off or disabled power management, you must take immediate action to resolve a low-battery condition to prevent losing unsaved information.

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## Replacing Battery Pack(s)

If you are operating the computer with only one battery pack or if the computer indicates a low-battery condition, initiate Suspend before replacing the battery pack(s).



**CAUTION:** To prevent loss of unsaved data when the computer is on and you are removing the only battery pack, initiate Suspend. When the screen blanks and the power/suspend light begins blinking, remove the battery pack and replace it with a charged battery pack within ten minutes.

If you are operating the computer with two battery packs and the computer is *not* in a low-battery condition, you can remove one battery pack without first initiating Suspend.

## Removing a Battery Pack from the Computer

1. If you are operating the computer with only one battery pack or if a low-battery condition exists, press the suspend button ❶. (The screen blanks, the power/suspend light blinks, and the status panel turns off.)
2. Pull forward on the battery release on the right side of the computer ❷ to release the battery pack in the dedicated battery compartment.

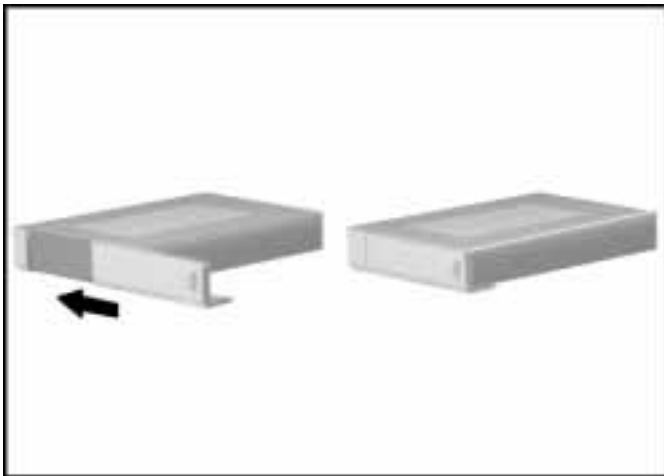
**NOTE:** To release a battery pack in the MultiBay, pull forward on the MultiBay device release on the left side of the computer.

3. Remove the battery pack ❸.



*Removing a Battery Pack from the Computer*

4. If you removed the battery pack from the MultiBay, slide the battery panel to the left until it is flush with the side of the battery pack for more convenient storage.



*Sliding the Battery Panel Flush with the Side of the Battery Pack*



## Inserting a Battery Pack into the Computer

The front of the battery pack has a sliding panel that covers the larger opening of the MultiBay when the battery pack is inserted into the MultiBay. Before inserting the battery pack into the battery compartment, slide the panel all the way to the left.

1. With the label on the battery pack facing up and the metal contacts facing in, insert the battery pack into the battery compartment or into the MultiBay until it clicks into place.
2. If the battery pack is in the MultiBay, slide the battery panel to the right to cover the opening beside the battery pack.



*Sliding the Battery Panel to Cover the MultiBay Opening*

3. If the computer is in Suspend, press the suspend button or slide the power switch to the right to exit the Suspend state.

## Charging Battery Packs

You can charge one or two battery packs in the computer, in the expansion bases, or in the optional external Battery Fastcharger.

**NOTE:** Refer to the documentation included with the optional external Battery Fastcharger for information about charging battery packs in that option.

### Charging Battery Packs in the Computer

The computer begins charging a battery pack that has less than a full charge whenever an external power source is connected. The yellow battery light on the front of the computer turns on to indicate when a battery pack is charging. When a battery pack completes fast charging, the battery light turns off. The computer charges a battery pack in the battery compartment first and then charges a battery pack in the MultiBay.

Fast charge is a rapid charge to a battery pack in the computer. The time required to fast charge the battery pack depends on whether the computer is off or on and the type and number of features or optional hardware being used. An optional battery fastcharger also fast charges both packs.

Each fully discharged battery pack charges in approximately 1.5 hours when the computer is off. Charging time is increased when the computer is on.

**IMPORTANT:** After it fully charges a battery pack, the computer (or expansion bases) maintains the charge by supplying a constant trickle charge. Therefore, if you keep battery pack(s) in the computer or expansion base when it is connected to external power, you will extend the operating time of the battery pack(s).

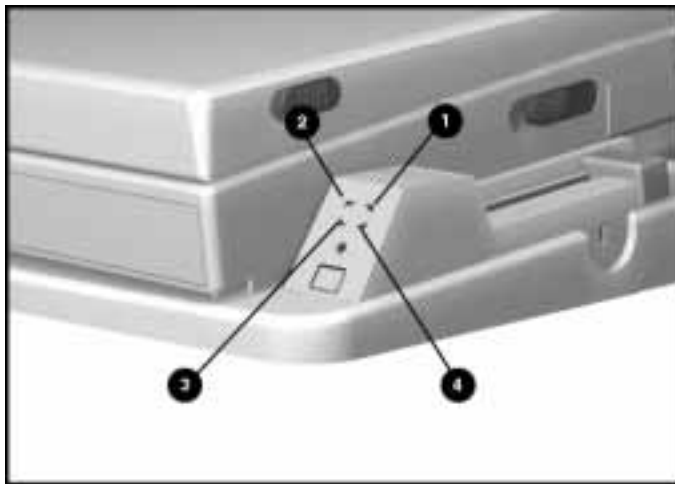
### Charging Battery Packs in Expansion Bases

When you dock the computer in one of the expansion bases (which is connected to an electrical outlet), the expansion base begins charging battery pack(s) that are less than fully charged.

**■ ■**

- ❶ Computer battery compartment
- ❷ Computer MultiBay
- ❸ Expansion Base MultiBay I
- ❹ Expansion Base MultiBay II

- ❶ Computer battery compartment
- ❷ Computer MultiBay
- ❸ Expansion Base MultiBay I
- ❹ Expansion Base MultiBay II



### Yellow Battery Lights on the Expansion Base

## Charging Battery Packs Outside Normal Operating Conditions

- The battery pack temperature is outside the normal operating range of 50°F to 104°F (10°C to 40°C).
- The battery pack is below normal discharge levels, which can occur with new battery packs or after approximately 30 days of nonuse.

- The battery pack temperature is outside the normal operating range of 50°F to 104°F (10°C to 40°C).
- The battery pack is below normal discharge levels, which can occur with new battery packs or after approximately 30 days of nonuse.

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When you connect the computer to an external power source, the battery light on the computer turns on. However, charging may not occur until the battery pack reaches normal operating conditions, which may take several minutes to an hour. When the battery pack reaches the normal temperature and charge level, it begins to charge. The battery light on the computer turns off when the battery pack is fully charged.

## Storing Battery Packs

Battery packs self-discharge even when they are not being used. If the computer will be unused and disconnected from an external power source for more than two weeks, remove the battery pack(s). This will reduce the discharge rate and extend the battery life.

To prolong the battery charge of a stored battery pack, store it in a cool, dry place. The recommended storage temperature range is from -4°F to 86°F (-20°C to 30°C). High temperatures cause a battery pack to lose its charge more quickly and reduce the battery pack life.



**CAUTION:** To prevent permanent damage to a battery pack, do not expose it to high temperatures for extended periods of time.

---

**IMPORTANT:** To ensure battery gauge accuracy, fully charge, fully discharge, and fully recharge a battery pack that has been unused for more than 30 days.

## Recycling Used Battery Packs

The battery pack recycling program provides a safe and easy method for disposing of used battery packs. To inquire whether the recycling program is available in your area, see the Compaq worldwide telephone numbers in the Preface of this guide. If a number for recycling is not listed for your area, contact your Compaq authorized dealer, reseller, or service provider.

# Connecting External Desktop Equipment

The computer automatically detects most new equipment and installs any needed device drivers. If you connect new equipment that does not work as expected, double-click the Add New Hardware icon in Control Panel for help installing the equipment. Double-click the Printers icon in Control Panel for help installing a new printer.

This chapter describes connecting the following external desktop equipment:

- Serial device, such as a serial mouse or a modem
- Parallel device, such as a printer
- External monitor
- External keyboard, numeric keypad, PS/2 mouse, or other pointing device
- MultiBay Expansion Base and MultiBay-ISA Expansion Base (docking and undocking the computer)
- Security cable lock (attaching to the computer or to the expansion bases)

This chapter also describes how to use the infrared port.

## Serial Devices

The following illustration and procedures describe connecting a serial device to the serial port.

1. If the computer is on, press the suspend button to initiate Suspend.
2. Connect one end of the signal cable to the serial connector on the device.
3. Connect the other end of the signal cable to the serial connector on the rear panel of the computer.



*Connecting a Serial Device to the Computer*

4. Plug the printer power cord of the device into a properly grounded electrical outlet.
5. Press the suspend button or slide the power switch to the right to exit Suspend.
6. Turn on the device.

**IMPORTANT:** If a new serial device does not work, double-click the Add New Hardware icon in Control Panel for help on installing device drivers.

## Parallel Devices

**NOTE:** The parallel port is compliant with industry standards for a bidirectional parallel peripheral interface. It supports the faster bidirectional communications of the Extended Capabilities Port (ECP) mode and the Enhanced Parallel Port (EPP) mode for compliant parallel devices.

The following illustration and procedures describe connecting a printer to the parallel port.

1. If the computer is on, press the suspend button to initiate Suspend.
2. Connect the signal cable included with the printer to the parallel connector on the printer.
3. Connect the other end of the signal cable to the parallel connector on the rear panel of the computer.



*Connecting a Parallel Device to the Computer*

4. Plug the printer power cord into a properly grounded electrical outlet.
5. Press the suspend button or slide the power switch to the right to exit Suspend.
6. Turn on the printer.

**IMPORTANT:** If a new parallel printer does not work, double-click the Printers icon in Control Panel (or Add New Hardware icon if device is not a printer) for help on installing device drivers.

## External Monitor

The computer can support an external monitor with a resolution up to  $1024 \times 768$  in 256 colors.

Follow these steps to connect an external monitor:

1. Connect the monitor signal cable to the external monitor connector on the rear of the computer.



*Connecting an External Monitor to the Computer*

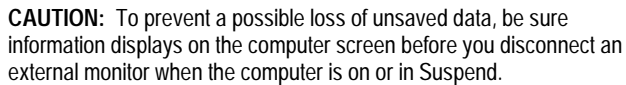
2. Plug the monitor power cord into a properly grounded electrical outlet.
3. Turn on the monitor and turn on the computer if it is off.
4. If the external monitor remains blank after it warms up, press the **Fn+F4** hotkey to switch displays.
5. If this is the first time you have connected the external monitor, double-click Display in Control Panel to verify or change display settings.



[illegible]

The **Fn+F4** hotkey switches between the external monitor, the internal computer display, and simultaneous display (both screens). However, the **Fn+F4** hotkey cannot switch from the external monitor if the setting for screen resolution or number of colors is different from that for the internal display. To switch between displays or to display simultaneously to both screens, set the screen resolution and number of colors the same for both screens.

Before disconnecting an external monitor when the computer is on, press **Fn+F4** to be sure you can switch to the internal display. If the **Fn+F4** hotkey does not work, save your work and turn off the computer or initiate Hibernation before disconnecting the external monitor.



## External Keyboard, Numeric Keypad, or PS/2 Mouse

Follow these steps to connect an external keyboard, numeric keypad, or PS/2 mouse to the keyboard/ mouse connector on the rear panel of the computer.

1. Press the suspend button to initiate Suspend if the computer is on.
2. Connect the external keyboard, numeric keypad, or PS/2 mouse cable to the keyboard/mouse connector on the rear of the computer.
3. Press the suspend button to exit Suspend.



*Connecting an External Keyboard, Keypad, or Pointing Device*

**NOTE:** The integrated pointing device is disabled when an external pointing device is connected. To gain access to the integrated pointing device, initiate Suspend and disconnect the external pointing device.

## MultiBay-ISA Expansion Base

The MultiBay-ISA Expansion Base extends the functionality of the original MultiBay Expansion Base by providing a full-length ISA slot and Premier Sound audio system. The PremierSound audio delivers CD-quality sound by using two high-performance speakers in bass-reflex enclosures and a five-stage built-in equalizer.

The ISA slot and new audio features are in addition to the two PC Card Type III slots, integrated Ethernet support, and two MultiBay device bays of the original MultiBay Expansion Base.

## Docking the Computer in the Expansion Bases

The Expansion Bases provide desktop functionality for the computer. In addition to the replicated computer ports and connectors, the expansion bases also have two MultiBays, two Type III PC Card slots, Ethernet RJ-45 (10BASE-T) and BNC (10BASE2) connectors, a MIDI/game port, and an additional mouse-only connector.

Follow these steps to dock the computer in the expansion base:

1. Turn off the computer.



**CAUTION:** Docking the computer while in Suspend or Hibernation may result in data loss and problems using either expansion base and network devices.

---

2. Turn off and disconnect all external equipment connected to the computer.
3. Close the computer. (Optional if the monitor support cover is not installed on the expansion base.)

- .....
4. Slide open the external options connector cover in the connector door of the computer to expose the external options connector.

**NOTE:** If a cable or PC Card extends beyond the PC Card slot when connecting the computer to the expansion base, the PC Card connector may be damaged.



*Sliding Open the External Options Connector Cover*

5. Ensure that the expansion base is connected to external power and that the docking lever is in the forward position.

6. Use both hands to slide the computer into the expansion base until you feel a slight resistance.



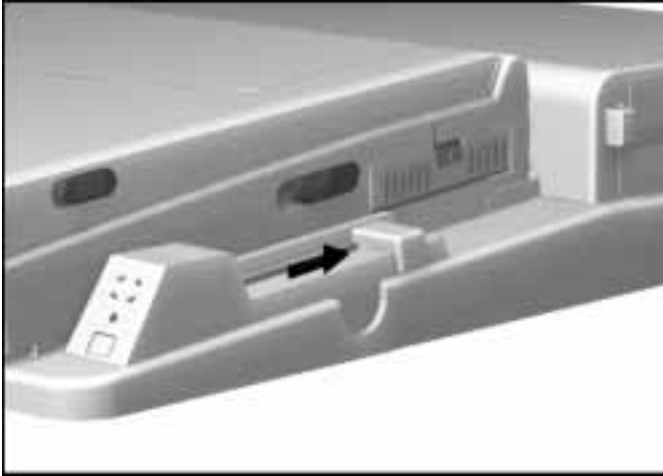
**CAUTION:** To prevent damage to the connectors on the computer and expansion base, use both hands to slide the computer straight back into the expansion base. To prevent damage to the PC Card connector, remove any PC Cards or cables from the computer that do not allow the PC Card doors to fully close prior to docking.

---



*Sliding the Computer into the Expansion Base*

- .....
7. Push the docking level back to complete the docking procedure.
  8. Push the docking lever away from you to pull the computer into the expansion base and to seat the external options connector.



*Using the Docking Lever to Dock the Computer*

9. Press the expansion base power button **1** or the computer power switch to turn the system on. The power light on the expansion base turns on to indicate that the system is on **2**.

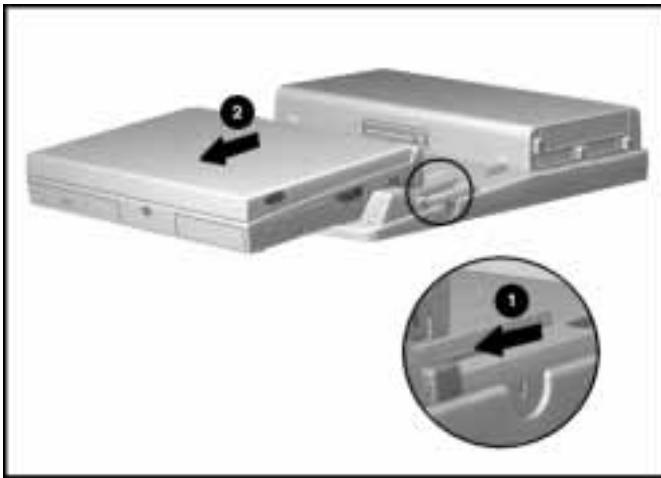


*Turning the System On with the Expansion Base Power Button*

## Undocking the Computer from the Expansion Bases

Follow these steps to undock the computer from the expansion bases:

1. Save your work.
2. Close all applications that access information from the hard drive or the CD-ROM drive in the expansion base.
3. Remove any PC Cards or cables that do not allow the computer PC Card door to fully close.
4. Close the PC Card door.
5. Initiate Suspend from the Windows Start menu, or close Windows and turn off the computer by pressing the power button on the expansion base.
6. Close the computer display if it is open.
7. Pull the docking lever to the forward position<sup>①</sup>.
8. Use both hands to slide the computer out of the expansion base<sup>②</sup>.



*Undocking the Computer from the Expansion Base*

**NOTE:** Because the expansion base is not a motorized docking station, the Eject PC feature in Windows 95 is not supported for the computer.

.....

## Using the Ethernet Connectors on the Expansion Base

The expansion bases have an Ethernet controller that is NE-2000 compatible and two Ethernet connectors: RJ-45 (10BASE-T) and BNC (10BASE2).

The computer has the following factory default Ethernet settings:

- I/O address            300h
- Interrupt request    IRQ 10
- Connector type      RJ-45

Refer to Chapter 10, "Running Computer Setup," for information on changing the Ethernet settings.

## Attaching an Optional Security Cable Lock

A slot is provided on the rear of the computer to lock the undocked computer to an immovable object. A slot is provided on the right side of the expansion base to lock the expansion base and docked computer to an immovable object.

**NOTE:** You can purchase an optional cable lock from Kensington Microware Limited or from Compaq authorized dealers and resellers worldwide. Ask for the Kensington MicroSaver Security System Model 64068.

Follow these steps to attach the optional cable lock to the undocked computer or to the expansion base and docked computer:

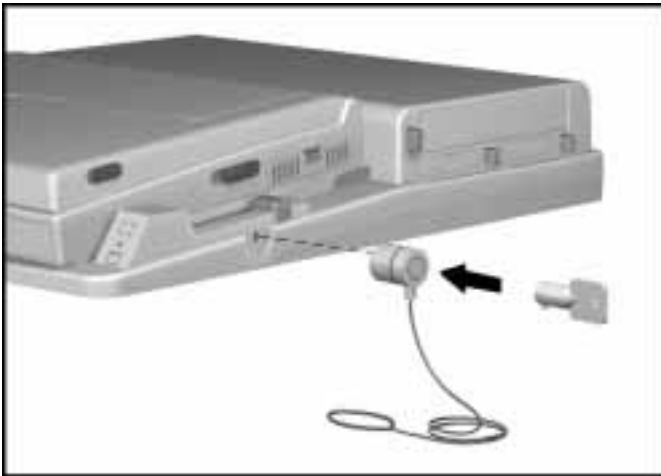
1. Loop the cable around a heavy, fixed object.
2. Insert the lock end of the cable through the loop end of the cable.
3. Insert the lock into the security slot on the undocked computer or into the security slot on the expansion base.



- .....
4. Insert the key into the lock, turn it to the locked position, and remove the key.



*Securing the Computer with an Optional Cable Lock*



*Securing the Expansion Base and Docked Computer with an Optional Cable Lock*

.....

The computer has an infrared port ❶ that allows cable-free IrDA communication between the computer and another infrared-equipped computer or printer.



*Infrared Port on the Computer*

**NOTE:** When the computer is docked in either expansion base, the infrared port on the expansion base is enabled.

The computer supports a speed of 115 kilobits per second (Kbps) when communicating by an infrared port.

## Preparing for an Infrared Connection

The infrared port uses an invisible beam of infrared light to communicate with another infrared-equipped computer, printer, or other device.

To establish an infrared link:

- Be sure the infrared ports on both devices are enabled and facing each other at a distance no greater than three feet (one meter).
- Avoid moving the infrared ports away from each other during data transmission.
- Avoid interference from remote control units (such as wireless headphones or audio devices) pointed at the infrared ports.
- Avoid direct sunlight, fluorescent light, or flashing incandescent light close to the infrared ports.
- Keep the path between the infrared ports free of any objects that might interfere with data transmission.
- Do not point one of the ports more than 30 degrees (plus or minus 15 degrees off the centerline) away from the infrared port of the device with which you are connecting.

The expansion bases also have a built-in infrared port. When the computer is docked in the expansion base, the infrared port on the computer is disabled and the infrared port on the expansion base is enabled.

To establish an infrared connection, run the preinstalled Microsoft Infrared Monitor utility. For additional information on the Microsoft Infrared Monitor utility, click the Infrared Monitor Help menu.

To transfer files, after establishing an infrared connection, run the Direct Cable Connection program. A program wizard guides you through transferring files using an infrared connection (or a cable connection).

## Working with Removable Drives

The computer has one MultiBay ❶, one dedicated hard drive bay ❷, and one dedicated battery compartment ❸. Each expansion base has two MultiBays ❹.

When the computer is undocked, drive activity is indicated by the following icons on the status panel:

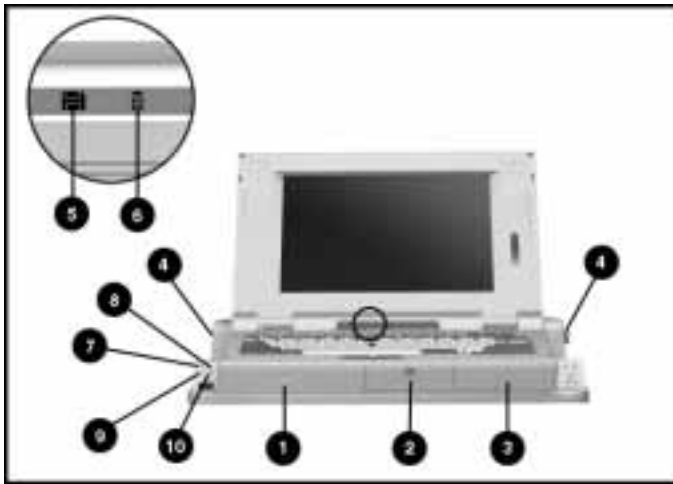
- ❺ Diskette drive icon
- ❻ Hard drive/CD-ROM drive icon

**NOTE:** Refer to Chapter 5, "Connecting External Desktop Equipment," for information about docking the computer.

When the computer is docked, drive activity is indicated by the following lights on the left front of the expansion base:

- ❼ Computer diskette drive light
- ❽ Computer hard drive/CD-ROM drive light
- ❾ Expansion base diskette drive light
- ❿ Expansion base hard drive/CD-ROM drive light

A CD-ROM drive also has an activity light on the front of the drive.



*Drive Bays and Activity Icons and Lights*

## Number and Supported Locations for Drives and Battery Packs

The following table lists the removable drives and battery packs that can be used in the computer and expansion bases, along with the maximum number and supported locations.

Number and Supported Locations for Removable Components		
Removable Components	Number Supported	Locations Supported
Hard drives *	Up to four	One in the computer dedicated hard drive bay, one in the computer MultiBay, and two in the expansion base MultiBays. (The hard drive must be placed into the optional MultiBay Hard Drive Carrier before inserting it into one of the MultiBays.)
CD-ROM drives	Up to three	One in the computer MultiBay and two in the expansion base MultiBays. However, if two CD-ROM drives are in the expansion base, neither can play audio (music) CDs.
3.5-inch diskette drives **	Up to two	One in the computer MultiBay and one in either of the expansion base MultiBays. (You cannot have two diskette drives in the expansion base.)
Battery packs ***	Operate computer with one or two	One in the computer dedicated battery compartment and one in the computer MultiBay.
	Charge up to four	One in the computer dedicated battery compartment, one in the computer MultiBay, and two in the expansion base MultiBays.

\* For information about adding hard drives, see "Using Additional Hard Drives" and "Changing the Boot Drive" later in this chapter.

\*\* Real mode device drivers must be used for a diskette drive in the expansion base. For more information, see "Accessing a Diskette Drive in the Expansion Base" later in this chapter.

\*\*\* Refer to Chapter 4, "Using Battery Packs," for information about using and charging battery packs.

## Caring for Removable Drives

Removable drives are fragile components that must be handled with care. A hard drive carrying case and a MultiBay device carrying case are supplied with the computer to protect a drive whenever it is out of the drive bay.



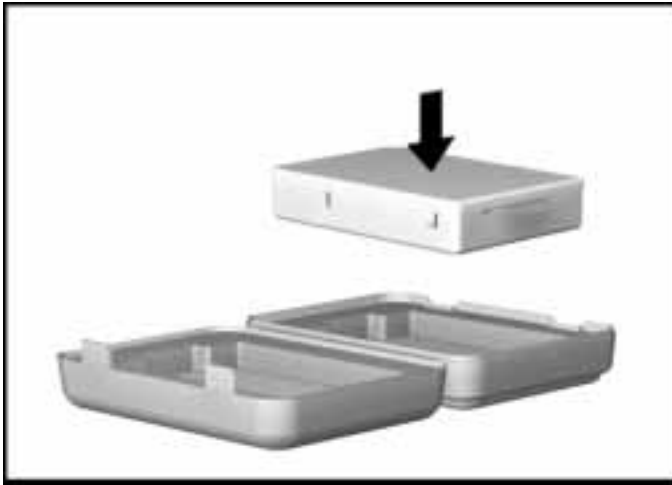
**CAUTION:** To prevent damage to the computer, damage to the removable drive, or loss of information, observe these precautions:

- Turn the computer off before removing or inserting a drive. Do not remove or insert a drive when the computer is On, in Suspend or in Hibernation. If you are unsure whether the computer is in Hibernation, turn the computer on and then off again.
- If there is a diskette or a compact disc in the drive, remove it before removing the drive.
- Do not remove the CD-ROM drive with the CD loading tray extended. Close the CD loading tray before removing the drive.
- Ensure that you are discharged of static electricity before handling the drive. Electrostatic discharge can damage electronic components. For more information, refer to Appendix F, "Electrostatic Discharge."
- When handling the drive, always grasp the outer metallic case and avoid touching the connectors.
- Always handle a drive carefully. Do not drop it.
- After removing a hard drive, immediately place it into the hard drive carrying case. Do not place a hard drive into the MultiBay device carrying case.
- After removing a CD-ROM drive or a diskette drive, immediately place it into the MultiBay device carrying case.
- Avoid exposing the drive to temperature extremes.
- Do not spray the drive with cleaners nor expose the drive to liquids.
- Avoid exposing the hard drive to products that have magnetic fields, such as monitors or speakers.
- If a drive must be mailed: Make a backup copy of the data. Place a hard drive into the hard drive carrying case; place a CD-ROM drive or diskette drive into the MultiBay device carrying case. Place the carrying case into a bubble pack mailer or other suitable form of protective packaging. Label the package "Fragile: Handle With Care."

## Placing a Hard Drive into the Hard Drive Carrying Case

A hard drive carrying case is supplied with the computer to protect a hard drive when it is out of the drive bay. Do *not* place a hard drive into the MultiBay device carrying case.

**IMPORTANT:** Before handling a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.



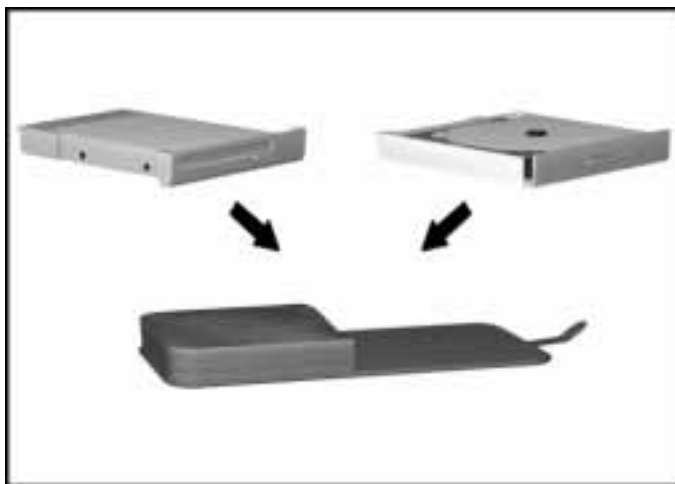
*Placing a Hard Drive into the Hard Drive Carrying Case*

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## Placing a CD-ROM Drive or Diskette Drive into the MultiBay Device Carrying Case

A MultiBay device carrying case is supplied with the computer to protect a CD-ROM drive or a diskette drive when it is out of the MultiBay. Do *not* place a hard drive into the MultiBay device carrying case.

**IMPORTANT:** Before handling a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.



*Placing a CD-ROM Drive or Diskette Drive into the MultiBay Device Carrying Case*



## Dedicated Hard Drive Bay

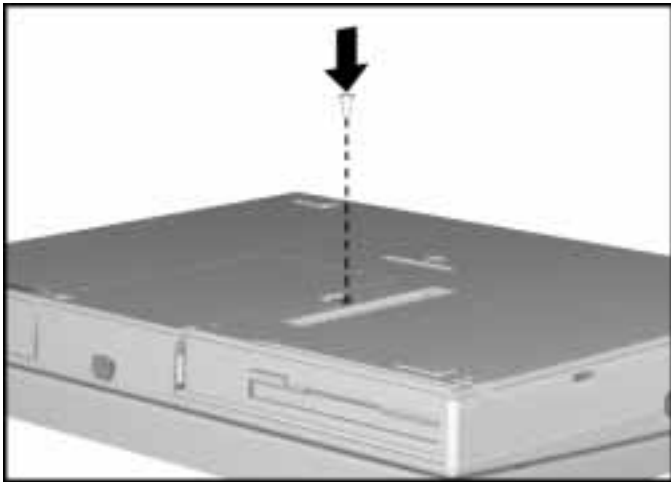
The computer hard drive bay is a dedicated bay; it supports only a hard drive.

The LTE 5000 hard drive that is preinstalled in the dedicated hard drive bay contains the software necessary to access many resources that will not be available if you start the computer from a drive other than the preinstalled (or specially prepared) hard drive.

### Securing a Drive in the Dedicated Hard Drive Bay

Four security screws are supplied with the computer to secure drives in the dedicated hard drive bay and the computer MultiBay (two screws are spares). Insert one of the screws to help prevent unauthorized removal of the hard drive from the hard drive bay.

Use a flat-bladed or Torx T-8 screwdriver to insert the security screw next to the hard drive release on the bottom of the computer. This screw prevents the hard drive release from sliding to release the drive.



*Securing a Hard Drive in the Dedicated Hard Drive Bay*

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## Removing a Hard Drive from the Dedicated Hard Drive Bay

To remove the hard drive from the hard drive bay, follow these steps:

**IMPORTANT:** Before inserting or removing a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.

1. Save your work and close applications.
2. Shut down the computer: click the Start button, click Shut Down, then click Yes.
3. Open the hard drive door by slightly lifting the front of the computer, sliding the door latch down, and pulling the door open.



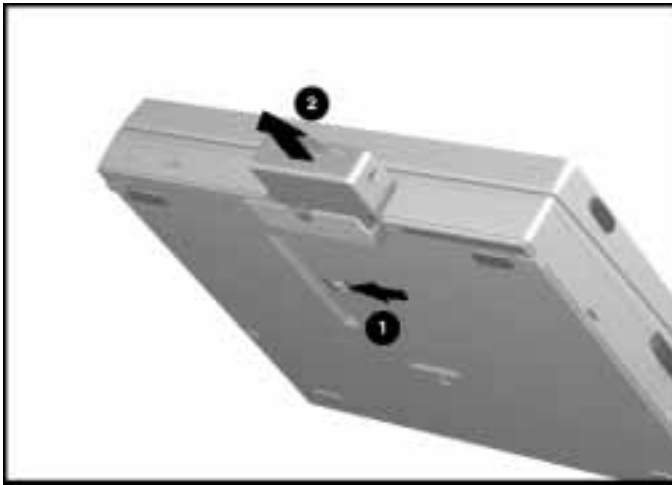
*Opening the Hard Drive Door*

4. Release the hard drive by sliding and holding the hard drive release **1** on the bottom of the computer as you pull gently on the hard drive tab **2**.



**CAUTION:** To prevent damage to the hard drive, do not use excessive force when removing it. If you are unable to remove the drive easily, verify that the security screw has not been inserted to hold the release in place and secure the drive in the bay.

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*Removing the Hard Drive from the Dedicated Hard Drive Bay*

5. Remove the hard drive and immediately place it into the hard drive carrying case.
6. Push the hard drive door in to close it.

.....

## Inserting a Hard Drive into the Dedicated Hard Drive Bay

To insert a hard drive into the dedicated hard drive bay, follow these steps:

**IMPORTANT:** Before inserting or removing a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.

1. If the computer is on, turn it off.
2. Open the hard drive door by slightly lifting the front of the computer, sliding the door latch down, and pulling the door open.



*Opening the Hard Drive Door*

- .....
3. With the hard drive tab facing out and the labels on the drive facing up, insert the drive into the hard drive bay until it clicks into place. (The system can recognize the hard drive only if it is properly seated.)

**NOTE:** If you are unable to insert the drive easily, verify that the security screw has not been inserted into the bottom of the computer.



*Inserting the Hard Drive into the Hard Drive Bay*

4. Push the hard drive door in to close it.
5. If you want to secure the hard drive in the hard drive bay, see "Securing a Drive in the Dedicated Hard Drive Bay" earlier in this chapter.

## Computer MultiBay

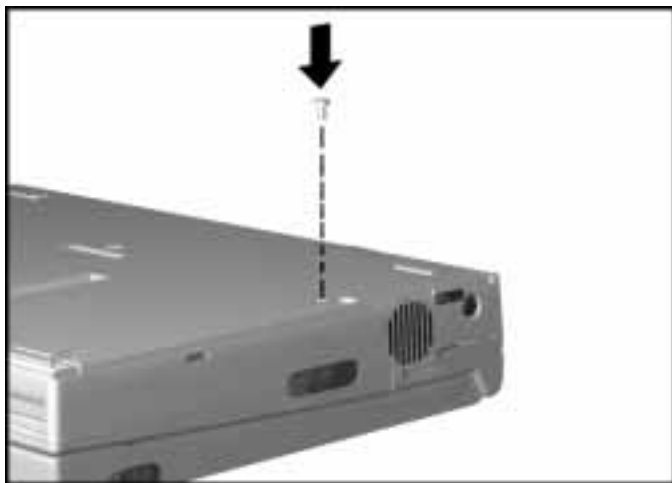
The following procedures describe inserting and removing drives from the computer MultiBay. The procedures are similar to insert drives into and remove drives from the expansion base MultiBays.

One difference between the computer MultiBay and the expansion base MultiBays is the provision to secure a drive in the computer MultiBay. There are no provisions to secure drives in the expansion base MultiBays.

### Securing a Drive in the Computer MultiBay

Four security screws are supplied with the computer to secure drives in the dedicated hard drive bay and the computer MultiBay (two screws are spares). Insert one of the screws to help prevent unauthorized removal of a drive that is in the computer MultiBay.

Use a flat-bladed or Torx T-8 screwdriver to insert the security screw into the bottom of the computer as illustrated below. The screw fits through a slot in the drive or the MultiBay Hard Drive Carrier to hold it in place.



*Securing a Drive in the Computer MultiBay*

## Inserting the MultiBay Weight Saver into the Computer MultiBay

When you do not need a device in the computer MultiBay, you can insert the supplied MultiBay Weight Saver. The MultiBay Weight Saver covers the MultiBay opening without adding the weight of a drive or battery to the computer. Although the MultiBay Weight Saver looks similar to the optional MultiBay Hard Drive Carrier, the MultiBay Weight Saver is *not* for use with the hard drive.

**NOTE:** If you are unable to insert the MultiBay Weight Saver easily, verify that the security screw has not been inserted into the bottom of the computer.



*Inserting the MultiBay Weight Saver*

## Inserting a Hard Drive into the Computer MultiBay

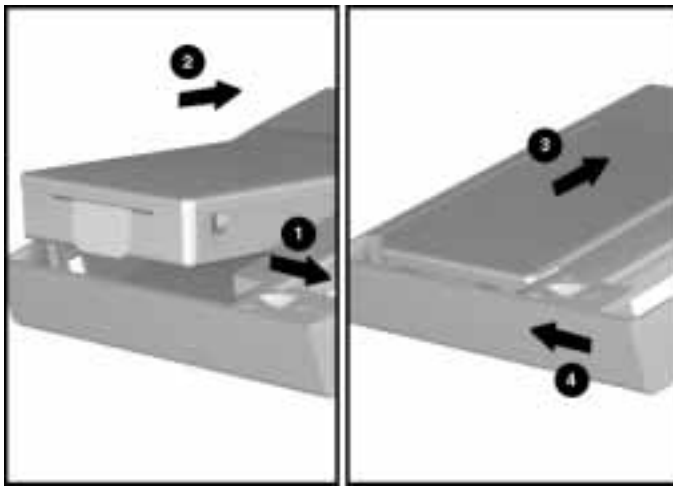
A hard drive can be used in the computer MultiBay and in one or both of the expansion base MultiBays. The hard drive must be placed into the optional MultiBay Hard Drive Carrier before inserting it into one of the MultiBays.

**IMPORTANT:** Before inserting or removing a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.

.....

Follow these steps to place the hard drive into the MultiBay Hard Drive Carrier and to insert the carrier into the computer MultiBay:

1. Save your work and close applications.
2. Shut down the computer: click the Start button, click Shut Down, then click Yes.
3. Slide to the right and hold the release **1** on the right front of the MultiBay Hard Drive Carrier.
4. With the labels on the hard drive facing up and the connector on the drive facing the connector inside the carrier, place the drive into the carrier **2**.
5. Push the drive toward the back of the carrier **3** until the connector is fully seated.
6. Allow the release to slide back to the left **4** to secure the drive in the carrier.



*Placing the Hard Drive into the MultiBay Hard Drive Carrier*



7. Position the carrier against the left side of the MultiBay and insert it into the MultiBay until it clicks into place. The system can recognize the hard drive only if the carrier is properly seated.

**NOTE:** If you are unable to insert the carrier easily, verify that the security screw has not been inserted into the bottom of the computer.



*Inserting the MultiBay Hard Drive Carrier into the Computer MultiBay*

8. If you want to secure the hard drive in the MultiBay, insert the security screw as described in this chapter under "Securing a Drive in the Computer MultiBay."

## Removing a Hard Drive from the Computer MultiBay

To remove a hard drive from the computer MultiBay and from the MultiBay Hard Drive Carrier, follow these steps:

**IMPORTANT:** Before inserting or removing a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.

1. Save your work and close applications.
2. Shut down the computer: click the Start button, click Shut Down, then click Yes.
3. Pull forward on the MultiBay device release ❶ on the left side of the computer to release the MultiBay Hard Drive Carrier.

**NOTE:** If the MultiBay Hard Drive Carrier does not easily eject from the bay, verify that the security screw has not been inserted to secure the drive in the bay.

4. Remove the MultiBay Hard Drive Carrier from the computer MultiBay ❷.



*Removing the MultiBay Hard Drive Carrier from the Computer MultiBay*

5. Slide and hold the release inside the MultiBay Hard Drive Carrier as you pull the hard drive away from the carrier connector.
6. Lift the hard drive out of the carrier and immediately place it into the hard drive carrying case.

## Inserting a CD-ROM Drive into the Computer MultiBay

The system supports up to three CD-ROM drives—one in the computer MultiBay and two in the expansion base MultiBays. However, if two CD-ROM drives are in the expansion base, neither can play audio (music) CDs. If only one CD-ROM drive is in the expansion base and one is in the computer MultiBay, both can play audio (music) CDs.

**IMPORTANT:** Before inserting or removing a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.

Follow these steps to insert the CD-ROM drive into the computer MultiBay.

1. Save your work and close applications.
2. Shut down the computer: click the Start button, click Shut Down, then click Yes.
3. Position the CD-ROM drive against the left side of the MultiBay and insert the drive into the MultiBay until it clicks into place. The system can recognize the CD-ROM drive only if it is properly seated.

**NOTE:** If you are unable to insert the drive easily, verify that the security screw has not been inserted into the bottom of the computer.



*Inserting the CD-ROM Drive into the Computer MultiBay*

4. If you want to secure the CD-ROM drive in the MultiBay, insert the security screw as described in this chapter under "Securing a Drive in the Computer MultiBay."

## **Removing a CD-ROM Drive from the Computer MultiBay**

Follow these steps to remove the CD-ROM drive from the computer MultiBay:

**IMPORTANT:** Before inserting or removing a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.

1. If a compact disc (CD) is in the drive, remove it and place it into its protective case.
2. Close the CD loading tray by pushing the front panel of the tray.
3. Save your work and close applications.
4. Shut down the computer: click the Start button, click Shut Down, then click Yes.

5. Pull forward on the MultiBay device release **1** on the left side of the computer to release the drive.

**NOTE:** If the drive does not easily eject from the bay, verify that the security screw has not been inserted into the bottom of the computer to secure the drive in the bay.

6. Remove the CD-ROM drive from the MultiBay **2**.



*Removing the CD-ROM Drive from the Computer MultiBay*

7. Place the CD-ROM drive into the MultiBay device carrying case.

## Operating a CD-ROM Drive

The CD-ROM drive is compatible with industry-standard CD-ROM disc media and formats. It can read:

- CD-Digital Audio
- CD-ROM Mode 1 and Mode 2
- CD-ROM/XA Mode 2 (Form 1 and Form 2)
- CD-I Mode 2 (Form 1 and Form 2)
- Video CD
- Photo CD (single and multisession)
- ISO 9660 and High Sierra

Special features of the drive include:

- Optional 6x-speed transfer rate (900 Kbytes per second)
- 190 millisecond average access time
- MPC 2 (Multimedia Personal Computers (MPC-2))

Refer to Chapter 8, "Using Audio Equipment," for information about using audio equipment. Refer to the online Help for information about CD Player, Media Player, and Sound Recorder. Also refer to the documentation included with your CD applications.

**NOTE:** Occasionally clean the lens of the CD-ROM drive with a commercially available dry-type cleaning kit (not a wet-type kit). Follow the directions in the kit to insert the cleaning cartridge into the CD-ROM drive.

### Inserting a CD into the CD-ROM Drive

1. Turn on the computer.
2. Release the CD loading tray by pressing the release button **1** on the front panel of the CD-ROM drive.
3. Slowly pull the loading tray from the drive until it is fully extended **2**.
4. Remove the CD from its protective case and place it into the loading tray, label side up **3**. Handle the CD by the edges, not by the flat surfaces.



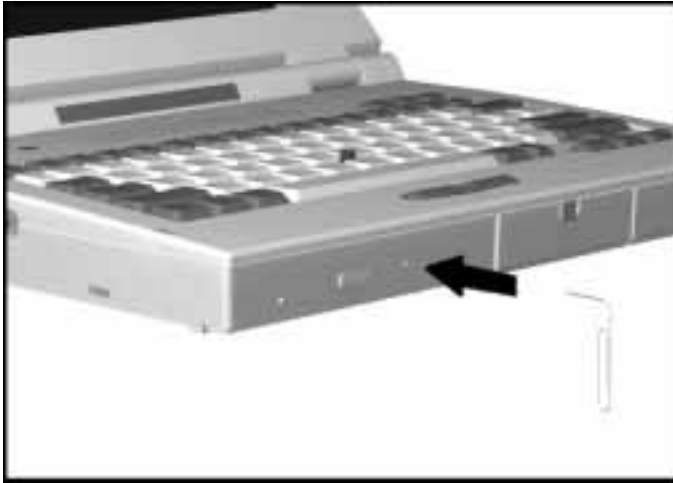
*Placing a CD into the CD Loading Tray*



## Opening the CD Loading Tray Manually

If you are unable to open the tray with the release button after you have exited a CD application, you can open the tray manually. Follow these steps to open the tray manually only if you cannot open the tray with the release button:

1. Insert a straightened paper clip into the manual eject hole and push gently until the tray opens.



*Manually Opening the CD Loading Tray*

2. Slowly pull the CD loading tray out from the drive until the tray is fully extended.
3. Remove the CD. Handle the CD by the edges, not by the flat surfaces.
4. Place the CD into its protective case.
5. Close the loading tray by pushing on the front panel of the tray.



## Accessing a Diskette Drive in the Expansion Base

The system supports two diskette drives—one in the computer MultiBay and one in either of the expansion base MultiBays. However, before you can access a diskette drive in the expansion base, you must disable the protected mode device drivers for the floppy disk controller. If you have only one diskette drive, and it is in the computer MultiBay, you do *not* need to disable the protected mode drivers.

Follow these steps only if you have inserted a diskette drive into one of the expansion base MultiBays:

1. Double-click the System icon in Control Panel, click the Device Manager tab, double-click Floppy disk controller, then double-click Standard Floppy Disk Controller.
2. Under Device Usage, click the box next to the docked and undocked configurations to remove the check marks.
3. Click OK to save the change and close Floppy Disk Controller Properties, then click OK to close System Properties.
4. Click the Start button, click Shut Down, then click Restart the computer.

When the computer restarts, it loads real mode device drivers for the floppy disk controller.

## Inserting a Diskette Drive into the Computer MultiBay

Follow these steps to insert a diskette drive into the computer MultiBay. If you insert a diskette drive into the expansion base, be sure to read the previous section before trying to access that drive.

**IMPORTANT:** Before inserting or removing a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.

1. Save your work and close applications.
2. Shut down the computer: click the Start button, click Shut Down, then click Yes.

- .....
3. Position the diskette drive against the left side of the MultiBay and insert the drive into the MultiBay until it clicks into place. The system can recognize the diskette drive only if it is properly seated.

**NOTE:** If you are unable to insert the drive easily, verify that the security screw has not been inserted into the bottom of the computer.



*Inserting the Diskette Drive into the Computer MultiBay*

4. If you want to secure the diskette drive in the MultiBay, insert the security screw as described in this chapter under "Securing a Drive in the Computer MultiBay."

## Removing a Diskette Drive from the Computer MultiBay

Follow these steps to remove a diskette drive from the computer MultiBay:

**IMPORTANT:** Before inserting or removing a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.

1. Save your work and close applications.
2. Shut down the computer: click the Start button, click Shut Down, then click Yes.
3. If a diskette is in the diskette drive, remove it from the drive.
4. Pull forward on the MultiBay device release **❶** on the left side of the computer to release the drive.

**NOTE:** If the drive does not easily eject from the bay, verify that the security screw has not been inserted into the bottom of the computer to secure the drive in the bay.

5. Remove the diskette drive from the MultiBay **❷**.



*Removing a Diskette Drive from the Computer MultiBay*

6. Place the diskette drive into the MultiBay device carrying case.

## Using a Diskette Drive

The diskette drive automatically reads and writes to the following formatted 3.5-inch diskettes:

- 1.44 MB high-density (HD)
- 720 Kbyte double-density (DD)
- 1.2 MB (Japanese format)

To insert a diskette into the diskette drive, hold the diskette by the end opposite the metal protective plate and gently push the diskette into the diskette drive until it clicks into place. The diskette drive button **1** pops out when the diskette is inserted correctly.



*Inserting a Diskette into the Diskette Drive*

To remove a diskette from the diskette drive, press the diskette drive button to eject the diskette, then remove it from the drive.

To format a diskette, double-click the My Computer icon, click the icon for the disk you want to format, click the File menu, then click Format.

## Using Additional Hard Drives

The computer can support up to four hard drives—two in the computer and two in the expansion base MultiBays. A variety of optional LTE 5000 hard drives are available. Some LTE Elite hard drives can also be used with limitations that are described later in this section.

**IMPORTANT:** The original LTE 5000 hard drive preinstalled in the dedicated hard drive bay contains software necessary to access many resources. Those resources will *not* be available if you start (boot) the computer from a drive other than the original (or specially prepared) hard drive. The original hard drive with the preinstalled software has "LTE 5000" printed on the label.

**IMPORTANT:** Before inserting or removing a drive, be sure you have read the cautions under "Caring for Removable Drives" earlier in this chapter.

### Using LTE 5000 Hard Drives

To use an optional LTE 5000 hard drive, follow the steps described earlier in this chapter to insert the drive into one of the MultiBays. Start (boot) the computer from the original LTE 5000 hard drive in the dedicated hard drive bay.

**NOTE:** If you want to start the computer from the optional hard drive, you must partition and format it as a bootable drive. You must also copy to it the LTE 5000 software that is necessary to operate the computer and access computer features.

### Using LTE Elite Hard Drives

The hard drive controller in the computer and in the expansion bases each support a primary hard drive and a secondary hard drive. Some later-model LTE Elite hard drives have secondary-drive capability, which means they can be used in a primary or a secondary drive bay. They can be used in any of the MultiBays to store and transfer data files. LTE Elite hard drives that do not have secondary-drive capability must be used in a primary drive bay only.

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Hard drives that have secondary-drive capability have the following symbol on the label located on top of the drive:



If you have LTE Elite hard drives that do not have secondary-drive capability, you can use them in the LTE 5000 computer with the limitations described later in this section.

### **Using LTE Elite Hard Drives That Have Secondary-Drive Capability**

You can use LTE Elite hard drives that have secondary-drive capability the same way you would use additional LTE 5000 hard drives. Follow the steps described earlier in this chapter to insert up to three in the computer and expansion base MultiBays. Start (boot) the computer from the original LTE 5000 hard drive in the dedicated hard drive bay.

### **Using LTE Elite Hard Drives That Do *Not* Have Secondary-Drive Capability**

LTE Elite hard drives that do not have the secondary-drive capability symbol must be used in the primary drive bay in the computer or MultiBay I in the expansion base.

Before beginning one of the procedures to insert the drive, run Computer Setup and ensure that the hard drive boot sequence on the Initialization menu is set to the factory default of:

1. Hard drive in the computer
2. Hard drive in the computer MultiBay
3. Hard drive in the expansion base MultiBay I
4. Hard drive in the expansion base MultiBay II

Refer to Chapter 10, "Running Computer Setup," for information about setting up your computer.

Follow these steps to insert an LTE Elite hard drive that does not have secondary-drive capability into the expansion base MultiBay I:

- NOTE:** If you have another hard drive in MultiBay II, that hard drive must have secondary-drive capability.

- Use the LTE Elite hard drive as you would use an additional LTE 5000 hard drive.

If you do not have an expansion base, you can insert an LTE Elite hard drive that does not have secondary-drive capability into the dedicated hard drive bay to transfer files. This procedure is not recommended for everyday use.

Follow these steps to insert an LTE Elite hard drive that does not have secondary-drive capability into the dedicated hard drive bay:

- ## 6-28 Working with Removable Drives

[illegible]

- ## 6. Transfer files between drives.

The computer must start (boot) from a drive that has the operating

**IMPORTANT:** The original hard drive preinstalled in the dedicated hard drive bay contains software necessary to access many resources. Those resources will *not* be available if you start (boot) the computer from a drive other than the original (or specially prepared) hard drive. The original hard drive has "LTE 5000" printed on the label.

**NOTE:** If a diskette drive is in the computer MultiBay, that is drive A. If no diskette drive is in the computer, a diskette drive in the expansion base is drive A.



[illegible]

- If you want to change the hard drive boot sequence, follow the instructions in Chapter 10 to run Computer Setup, select the Initialization menu, then select Hard Drive Boot Sequence. Follow the instructions on the status bar (at the bottom of the screen) to change the sequence.

## 6-30 Working with Removable Drives

## Using PC Cards

The PC Card (PCMCIA) slots allow you to add and remove options easily when you need to perform various tasks. Fax/modems, network cards, hard disk drives, and memory cards are a few of the options available as PC Cards. PC Cards look like thick credit cards and are available in three types (according to the thickness of the card): Type III, Type II, and Type I.

The computer has one Type III double slot that supports one Type III card or any combination of two Type II and Type I cards. A Type III card fits in the bottom slot only. The bottom slot is 1 and the top slot is 2.

The optional expansion bases have two Type III single slots, and each slot supports one Type III, Type II, or Type I card. The front slot is 3 and the back slot is 4.

## Using PC Cards in Windows 95

When you first insert a PC Card that requires no setup procedure, Windows 95 determines the necessary settings for the card and loads the correct drivers. For example, it configures a modem to a COM port and assigns a drive letter to a hard drive. Each subsequent time you insert the card, Windows 95 remembers the settings and configures the card automatically.

If the computer is off or in Suspend when you insert a PC Card, Windows 95 configures the card when you exit Suspend or turn on the computer. The computer beeps twice when the PC Card is ready for use.

Some PC Cards require an initial setup procedure before they can be configured. For example, memory cards must be formatted and some cards require additional card-specific device drivers.

In most cases, if a PC Card is recognized but not properly configured, the computer beeps once. In the case of a network card, the computer may beep twice even if the required card-specific device driver is not installed, but the network operating system will not recognize the card.

## Installing Card-Specific Device Drivers

Some PC Cards that may require additional card-specific device drivers to function properly are listed below:

- Network cards
- Combination cards (such as SCSI/sound cards and modem/network cards)
- Audio cards
- GPS (Global Positioning System) cards
- Pager cards

If you install card-specific device drivers provided by the PC Card manufacturer, be sure to install only device drivers for Windows 95. Do not install card and socket services or enablers. If diskettes are not clearly labeled or the instructions are unclear, call your PC Card manufacturer for more specific instructions.



**CAUTION:** If you install card and socket services or enablers provided by a PC Card manufacturer, you may not be able to use other PC Cards.

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If you need more information about setup procedures for various network PC Cards, contact the PC Card manufacturer or Compaq for assistance.

## Formatting Storage PC Cards

SRAM and flash memory cards require the following additional setup procedures before they can be used:

1. Modify the *CONFIG.SYS* file: Click the Start button, then click Help. Follow the instructions under the Help topic "SRAM (or Flash) memory card, installing support for."
2. Format the card: Double-click the My Computer icon, click the icon for the drive you want to format, click the File menu, then click Format.

.....

If you have an ATA hard drive card that is not already partitioned and formatted or if you want to change the partition, follow these steps:

1. Click the Start button, point to Programs, point to MS-DOS Real Mode, then click MS-DOS Mode. (The computer restarts and loads MS-DOS real mode drivers.)
2. At the command prompt, enter:  
**atainit d:**  
where d represents the drive letter assigned to the storage card.
3. Follow the instructions on the screen to partition and format the card.
4. Enter **exit** at the command prompt to restart the computer and unload the MS-DOS real mode drivers.

## Using PC Cards in MS-DOS Mode

MS-DOS real mode drivers are provided for older MS-DOS based programs that do not run under Windows 95 and for any PC Cards that do not have Windows 95 drivers available. To learn more about an MS-DOS real mode session, click the Start button, point to Programs, point to MS-DOS Real Mode, then click Readme.

To view information about PC Cards in MS-DOS mode, enter **cardinfo** at the command prompt. If you need to format storage cards in MS-DOS mode, use these commands:

**format d:** Formats an SRAM memory card.

**mcformat d:** Formats a flash memory card.

**atainit d:** Partitions and formats an ATA hard drive card.

where d represents the drive letter assigned to the card.

## Inserting a PC Card

You do not have to turn off the computer or initiate Suspend before inserting a PC Card. Follow these steps to insert a card into a PC Card slot.

1. Open the PC Card door, located on the right side toward the rear of the computer, by sliding the door latch down and pulling the door open.



*Opening the PC Card Door*

**NOTE:** The PC Card slot has two guide rails. Until you become familiar with the position of the rails, look inside the slot before inserting the PC Card.

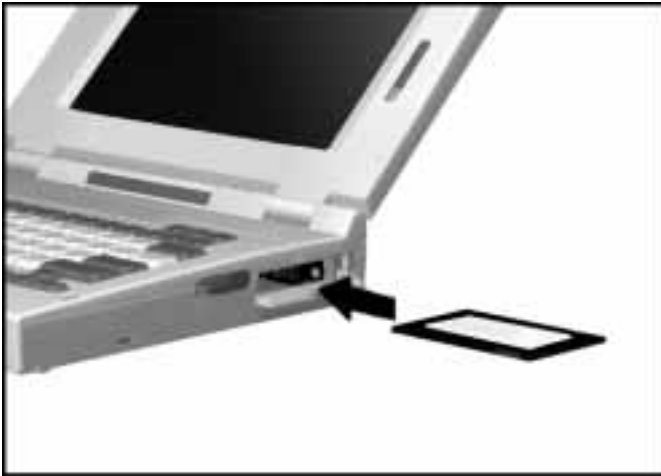
2. Align the PC Card with the guide rails and gently insert the card (connectors facing in, label facing up) into the slot until it is seated. After the card is seated, the release button is usually flush with the end of the card.



**CAUTION:** Do not force a PC Card into the PC Card slot. Forcing the card into the slot can damage the connector pins.

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The computer beeps twice when the card is ready for use, and a PC Card icon appears in the lower-right corner of the taskbar.



*Inserting a PC Card into the PC Card Slot*

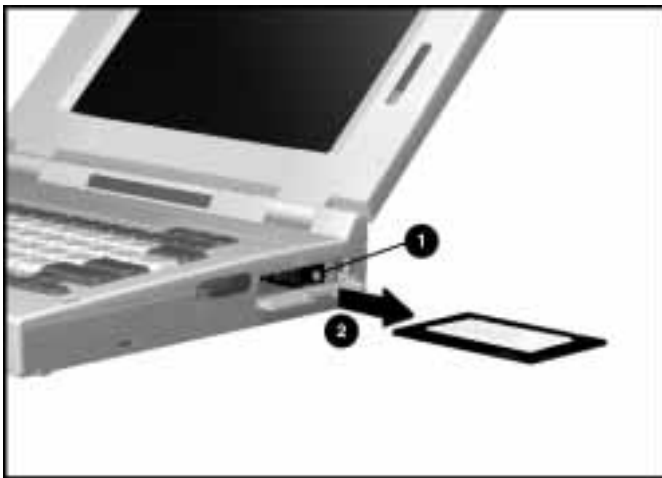
3. Push the PC Card door in to close it.

## Removing a PC Card

You do not have to turn off the computer or initiate Suspend before removing a PC Card. Follow these steps to remove a PC Card from a PC Card slot:

**NOTE:** To conserve battery power, remove PC Cards when they are not being used or turn off power to the PC Card slots through Computer Setup.

1. Click the PC Card icon in the lower-right corner of the taskbar.
2. Click the command to stop the card.
3. When you see the message that it is safe to remove the card, open the PC Card door by sliding the door latch down and pulling the door open.
4. Push in the release button **1** on the inside of the PC Card slot. You may use a capped pen or the eraser end of a pencil to push on the release button.
5. Pull the card out of the slot **2**. (Some cards may require more force to remove.)



*Removing a PC Card from the PC Card Slot*

If the computer is on when you remove the card, the computer beeps twice.

## Using Audio Equipment

The computer has an industry standard-compatible Sound Blaster Pro stereo sound system and both internal and external audio capabilities. You can record, edit, and play voice, music, and other sounds in digital audio files. These capabilities allow you to enhance an interactive demonstration with high-quality stereo sound and to take advantage of multimedia software for business, presentations, education, and entertainment.

The computer complies with Windows Object Linking and Embedding (OLE) requirements. You can add, edit, and update voice and music annotations in OLE-compliant Windows applications such as Microsoft Word and Excel.

Windows 95 includes CD Player, Sound Recorder, and Media Player. Use CD Player to play audio compact discs. Use Sound Recorder to record, play, and edit sound files. Use Media Player to play audio, video, and animation files and to control the settings for multimedia equipment. Refer to the online Help for more information.



## Using the Built-In Audio Equipment

The computer has the following built-in audio equipment:

- ❶ Two stereo speakers
- ❷ Volume control
- ❸ Microphone



*Built-in Audio Equipment*

## Internal Stereo Speakers

The internal stereo speakers support playback of recorded sounds, audio for games and business programs, and line-out devices such as a CD player, tape deck, or stereo tuner.

If external speakers or headphones are connected to the stereo speaker/headphone jack on the computer, the internal speakers are disabled.

If the computer is docked in either of the expansion bases, which have their own internal speakers, the computer internal speakers are disabled. If external speakers are connected to the expansion base, the expansion base internal speakers are disabled.

Refer to Chapter 5, "Connecting External Desktop Equipment," for information about docking the computer.

The **Fn+F5** speaker/headphone hotkey toggles off and on the internal speakers or external speakers or headphones connected to the computer or to either of the expansion bases.



**CAUTION:** Turning the speakers/headphones off turns off the low-battery warning beeps. Turning the volume control down turns down the volume of the low-battery warning beeps.

---

## Volume Control

The volume control on the left side of the computer controls the volume to the internal speakers in the notebook and expansion bases or to external speakers or headphones connected to the stereo speaker/headphone jack on the computer or the expansion base.

Volume is also controlled by Multimedia Properties. If the speaker icon doesn't appear in the lower-right corner of the taskbar, double-click Multimedia in Control Panel and then click the option to show volume control on the taskbar. Whenever you want to adjust volume, you can turn the computer volume control or click the speaker icon on the taskbar. For maximum volume, adjust both volume controls to their highest point.



**WARNING:** To reduce the risk of personal injury, adjust the volume control before putting on headphones.

---

## Internal Microphone

The internal microphone on the front of the computer supports audio input for spoken comments. The internal microphone is disabled if an external microphone is connected.

## Connecting Optional External Audio Equipment

In addition to the built-in audio equipment, the computer has jacks for the following external audio equipment:

- ❶ Stereo speaker/headphone jack
- ❷ Stereo line-in jack
- ❸ Mono microphone jack



*Jacks for Connecting External Audio Equipment*

### Stereo Speaker/Headphone Jack

The stereo speaker/headphone jack supports stereo speakers or headphones. Use only a 3.5-mm stereo plug in this jack. For best sound quality, a 32-ohm headphone is recommended. External speakers should be a minimum of 8 ohms.

You can use external speakers to provide more separation for the left and right audio channels and to produce more volume and higher quality sound.



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**WARNING:** To reduce the risk of personal injury, adjust the volume control before putting on headphones.

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**CAUTION:** Use only a 3.5 mm stereo plug in the stereo headphone jack. A mono plug may damage the computer.

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The **Fn+F5** speaker/headphone hotkey toggles off and on the internal speakers or external speakers or headphones connected to the computer or to an expansion base.



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**CAUTION:** Turning the speakers/headphones off turns off the low-battery warning beeps. Turning the volume control down turns down the volume of the low-battery warning beeps.

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## Stereo Line-In Jack

The stereo line-in jack is the input line for devices such as a CD player, tape deck, or tuner. The input device must supply levels compliant with the line input level specification of 0.5 to 4.25 volts. The line output of most devices meets this specification.



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**CAUTION:** Use only a 3.5 mm stereo plug in the stereo line-in jack. A mono plug in the stereo line-in jack may damage the input device.

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## Mono Microphone Jack

The mono microphone jack supports a mono microphone with a 3.5-mm plug. A powered electret condenser microphone is recommended.

Other types of microphones, such as stereo or dynamic, are not recommended. A stereo microphone will record the left channel on both the left and right channels. A dynamic microphone does not have the recommended sensitivity.

## Installing an Optional Memory Expansion Board

You can increase the original 8 or 16 megabytes of random access memory (RAM) up to 72 or 80 megabytes, respectively, by installing an optional memory expansion board. Memory expansion boards are available in 8, 16, 32, and 64 megabyte sizes. Only one memory expansion board can be installed in the memory slot.

Follow these steps to install the memory expansion board:

**NOTE:** You will need a flat-bladed or Torx T-8 screwdriver.

1. Save your work, close open applications, and shut down the computer.
2. Disconnect the AC Adapter from the computer, if it is connected.
3. Remove the battery pack(s) from the computer.



**WARNING:** To remove power from the computer, you must unplug the AC Adapter and remove the battery pack(s). Failure to do so may damage the equipment and expose you to the risk of electrical shock.



**CAUTION:** Electrostatic discharge can damage electronic components. Be sure you are properly grounded before beginning the following procedures. Refer to the electrostatic discharge instructions in Appendix F, "Electrostatic Discharge," for more information.

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- .....
4. Open the connector door on the rear panel of the computer.



*Opening the Connector Door*

5. Loosen the screw on each side of the memory slot cover (located above the external options connector).
6. Remove the memory slot cover.



*Removing the Memory Slot Cover*

**NOTE:** The memory slot supports only one memory expansion board.

- .....
7. Holding the memory expansion board by the edges, insert the board into the memory slot.
  8. Tighten the two screws on the back of the memory expansion board.



*Inserting a Memory Expansion Board into the Memory Slot*

9. Close the connector door.
10. Turn on the computer. After the Power-On Self-Test (POST), a prompt appears notifying you of the new RAM memory.

## Running Computer Setup

Computer Setup automatically recognizes and configures the system for new Compaq devices. It does this without prompting you for information about the devices. However, if you add a memory expansion board, the next time you turn on the computer a prompt appears notifying you of the new memory configuration.

You can run Computer Setup to view or to change the current configuration settings. To run Computer Setup, turn on or restart the computer and press **F10** when prompted to do so.

The first Computer Setup screen displays current settings for the system, ports, and devices. The status bar at the bottom of the screen gives instructions for navigating and choosing options. The status bar also displays descriptions as you highlight menus and menu options.

**NOTE:** If the main system board is replaced, the serial number on this screen will change to 0 (zero).

Select one of the menus from the menu bar at the top of the screen to view or to change configuration settings.

- **Initialization**—startup preferences
- **Ports**—input/output (I/O) and interrupt requests (IRQs) for serial/infrared, parallel, Ethernet, and the MPEG and TV Video Adapter option
- **Power**—power management, including Suspend and Hibernation; low battery warning beeps; and external energy saving monitor
- **Security**—setup and power-on passwords and device disabling



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# Initialization Menu

Use the Initialization menu to set the date and time, to change the language for Computer Setup, and to change the factory-default settings for the following options:

Option	Default
Power-On Memory Test	Disabled
Keyboard Num Lock	Disabled
Diskette Boot	Enabled
Drive Boot Sequence	Notebook Hard Drive Bay MultiBay - Notebook MultiBay I - Expansion Base MultiBay II - Expansion Base
Boot Display	Auto

Diskette Boot can be set either on this menu or on the Security menu.

The drive boot sequence sets the order in which the system searches for a bootable drive to start the computer. Refer to Chapter 6, "Working with Removable Drives", for information on changing the drive boot sequence.

The default boot display setting, Auto, allows the computer to automatically detect and adjust the resolution whenever an external monitor is connected or disconnected.

The language setting changes the language for Computer Setup. You can change it to any one of the six languages as often as needed.

## Ports Menu

Use the Ports menu to change the factory-default input/output (I/O) addresses and interrupt requests (IRQs) for the following ports:

Option	Default
Serial/Infrared	Serial: 3F8, IRQ 4 Infrared: 3E8, IRQ 4
Parallel	378, IRQ 7
MPEG Video Out Format: PAL, NTSC	NTSC
Network Setup	300h, IRQ 10, RJ-45

**NOTE:** If you select conflicting settings for the ports, the system will automatically change one of the settings.

## Power Menu

Use the Power menu to change the factory-default settings for the following options:

Option	Default
Power Management	Enabled While on Battery
Conservation Level	Medium Suspend timeout: 10 min. Hibernation timeout: 1 hr. Drive timeout: 6 min. Screen timeout: 4 min.
Low-Battery Warning Beeps	Enabled
Energy Saving Monitor	Disabled

**NOTE:** Disabling the PC Card slots under the Security menu also conserves power.

The factory-default setting for power management (Medium Conservation Level While on Battery) provides a balance between performance and battery life.

.....

The High conservation level provides the maximum amount of power conservation and the maximum battery operating time from a single charge. The Custom conservation level conserves power according to timeout settings that you specify. Refer to Chapter 10, "Running Computer Setup", for information on power management, Suspend, and Hibernation.

A timeout is a period of inactivity, after which power is turned off to the system or component. When the conservation level is set to Medium or High, timeouts are grayed out and cannot be changed. If you change the conservation level to Custom, be sure to also review the timeout settings.

If you disable or turn off Power Management or disable Hibernation, information in memory will not be automatically saved during a critical low-battery condition.



**CAUTION:** If you turn off or disable power management or disable Hibernation, you must take immediate action to save your work and resolve a low-battery condition.

---

If you disable the low-battery warning beeps, a low-battery condition will be indicated only by a blinking battery light (and a Windows warning message if enabled).

If you have an external energy saving monitor, you can enable the Energy Saving Monitor option on the Power Menu or enable the Energy Star compliant options in Windows Display Properties. These options allow the external monitor to enter low-power mode when the screen timeout occurs. If you enable these options and the external monitor is not an energy saving monitor, the screen display may become distorted when the timeout occurs.

## Security Menu

Use the Security menu to enable or disable the following security options:

Option	Default
Setup Password	Disabled
Power-On Password	Disabled
Power-On Password to Resume	Disabled
QuickLock/QuickBlank	Disabled
Serial/Infrared Ports	Enabled
Parallel Port	Enabled
PC Card Slots	Enabled
Diskette Drives	Enabled
Diskette Boot	Enabled

**NOTE:** The Windows 95 password settings in Control Panel are unrelated to password settings in Computer Setup.

### Setup Password

Use the Setup password to protect the system configuration from unauthorized changes. After you establish the setup password, you cannot change the system configuration until you enter the setup password.

**IMPORTANT:** Type carefully because the password does not display as you type it. If you choose to, you can use the same password for setup and for power-on.

The next time you run Computer Setup, a "password" prompt appears on the screen. If you enter the password incorrectly, you are prompted to reenter the password.

.....

If you forget your setup password, you cannot change the system configuration until the computer memory is cleared of the password. Contact your Compaq authorized dealer, reseller, or service provider for assistance.



**CAUTION:** Record your setup password and put it in a safe place. If you forget your setup password, you cannot reconfigure the computer until the computer memory is cleared of the password.

---

## Power-On Password

The power-on password prevents use of the computer until the password is entered. After you establish the power-on password, you must enter it whenever you turn on the computer. If you enable Power-On Password to Resume, you must enter the password when exiting Suspend.

**IMPORTANT:** Type carefully because the password does not display as you type it. If you choose to, you can use the same password for setup and for power-on.

The next time you start the computer (or exit Suspend), a "password" prompt appears. If you enter the password incorrectly, you are prompted to reenter the password.

If you forget your power-on password, you cannot use the computer until the computer memory is cleared of the password. Contact your Compaq authorized dealer, reseller, or service provider for assistance.



**CAUTION:** Record your power-on password and put it in a safe place. If you forget your power-on password, you cannot use the computer until the computer memory is cleared of the password.

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## QuickLock/QuickBlank

Enabling QuickLock/QuickBlank allows you to temporarily disable the keyboard and blank the screen until the power-on password is entered. After you have enabled QuickLock/QuickBlank, you can initiate it at any time by pressing the **Fn+F6** hotkey.

When QuickLock/QuickBlank is initiated, the key icon on the status panel turns on. Type your power-on password on the blank screen to exit QuickLock/QuickBlank.

## Device Disabling

Disabling devices prevents the unauthorized transfer of data using the devices. Disabling the infrared port and PC Card slots also conserves power. To reenable a device, deselect the Disable option and restart the computer.

Diskette Boot can be set either on this menu or on the Security menu.

## Exit Menu

The Exit menu has three options:

- **Save and Exit:** Saves configuration changes, but some changes do not take effect until the computer is restarted.
- **Exit (No Save):** Exits and does not save the changes you have made.
- **Restore Factory Defaults:** Replaces the current configuration settings with the original factory-default settings.

You must restart the computer for all your changes to Computer Setup to take effect.

## Customizing Computer Settings

Computer Setup has four menus to set preferences.

- Initialization menu: boot (startup) preferences
- Ports menu: input/output (I/O) addresses and interrupt requests (IRQ)
- Power menu: power management settings and low-battery warning beeps
- Security menu: Setup and power-on passwords and device disabling

Refer to the Windows 95 documentation or online Help for information about viewing or changing properties that are accessible through icons in Control Panel.

## Power Management

Power management timeout settings in Computer Setup initiate Suspend and Hibernation and turn off power to devices after a specified period of inactivity (called a timeout). Windows Power Properties provides additional power saving features.

### Computer Setup Power Management

The default Computer Setup power management setting provides a balance between performance and battery life. If you want to select a different setting, run Computer Setup, select the Power menu, then select Power Management.

The following power conservation levels are available while on battery (default) or while on AC or battery:

- **High Conservation Level**—Provides the maximum power conservation and the most battery life from a single charge.
- **Medium Conservation Level** (default)—Provides a balance between performance and battery life. Suspend is initiated after ten minutes of inactivity and Hibernation after one hour of inactivity.
- **Custom**—Allows you to specify the timeout settings for Suspend, Hibernation, hard drives, and screen.

## Windows 95 Power Properties

To open the Windows 95 Power Properties dialog box, double-click the Power icon in Control Panel. Windows 95 provides the following options:

- **Advanced** (default)—Activates power management settings in Computer Setup and provides some additional power-saving features.
- **Standard**—Activates the settings in Computer Setup.
- **Off**—Turns off *all* power management. The power management icon on the status panel turns off.

**NOTE:** You can also temporarily toggle power management off and on by pressing the **Fn+F7** hotkey. The next time you restart the computer, the Power Properties setting takes effect.



**CAUTION:** If power management is off, Hibernation will not automatically initiate during a critical low-battery condition. To prevent the loss of unsaved data, take immediate action to save your work and resolve a low-battery condition.

---

## Suspend

Suspend conserves power by turning off power to system components when they are not being used. Suspend is initiated automatically after a period of inactivity (default is 10 minutes). You can initiate Suspend by pressing the suspend button or by clicking the Windows Start button, then clicking Suspend.

When Suspend is initiated, the screen blanks, the green power/suspend lights blinks, and the status panel turns off. Information remains in system memory until you exit Suspend. With a fully charged battery, the computer can be left in Suspend for up to 100 hours.

Exit Suspend by pressing the suspend button or by sliding the power switch on. Your information returns to the screen at the point where Suspend was initiated.



## Hibernation

Hibernation automatically saves all information in memory to a Hibernation file on the hard drive and turns off the computer. Because the computer is off, there is no limit to the amount of time it can remain in Hibernation. When you turn on the computer again, your information returns to the screen at the point where Hibernation was initiated.

The factory default setting initiates Hibernation after one hour of inactivity and during a critical low-battery condition. You can manually initiate Hibernation by pressing **Fn** and the suspend button.

Hibernation can be used in the following ways:

- As a safeguard feature to automatically save information when the computer reaches a critical low-battery condition.
- As a "bookmark" feature to save your place for longer periods than can be done in Suspend.
- To save power by turning off the computer after a specified period of time in Suspend.

**NOTE:** Hibernation is not available when the computer is docked in the expansion bases. Hibernation is also not available when using other operating systems, such as OS/2 and Microsoft Windows NT.

## Security Features

The following security features are available:

- Computer Setup Security menu to set power-on and setup passwords and disable ports and devices.
- Security screws to secure drives in the hard drive bay and computer expansion bases (Chapter 6).
- Provision for an optional cable lock (Chapter 5).
- Windows 95 Passwords in Control Panel (online Help).

## Running Compaq Diagnostics

Compaq Diagnostics utilities are supplied on diskette with the computer. Run the Diagnostics utilities when you want to view or test system information and equipment that is installed or connected. The Diagnostics menu includes the following utilities:

- Computer Checkup (TEST)
- View System Information (INSPECT)
- Prepare Computer for a Compaq Service Call (RemotePaq)

If you have a problem you cannot solve, run Compaq Diagnostics before you call technical support. Run Computer Checkup and select to save the device list to a file and to print or to save the log of errors. Run the View System Information (INSPECT) utility and select to print or to save that information. Have the files or the printed information available when you call technical support. Refer to "Compaq Support" in the Preface of this guide for more information.

### Computer Checkup (TEST)

Computer Checkup (TEST) determines whether the various computer components and devices are recognized by the system and are functioning properly. You can display, print, or save the information generated by Computer Checkup.

Follow these steps to run Computer Checkup from the Compaq Diagnostics diskette:

1. Plug the computer into an external power source. (A low battery condition could interrupt the program.)
2. Turn on the external devices that you want to test. Connect the printer if you want to print a log of error messages.
3. Insert the Compaq Diagnostics diskette into drive A.
4. Turn on or restart the computer.

The computer starts from drive A, and the Diagnostics Welcome screen appears.



5. Press **Enter** to continue.

The Diagnostics menu appears.

6. Select Computer Checkup from the Diagnostics menu.

A Test Option menu appears.

7. Select "View the Device List" from the Test Option menu.

A list of the installed Compaq devices appears.

8. If the list of installed devices is correct, select OK.

The Test Option menu appears.

**NOTE:** If the list is incorrect, ensure that any new devices are installed properly. If you do not find an installation problem with a Compaq device not on the list, call your Compaq authorized dealer, reseller, or service provider. Non-Compaq devices may not be detected.

9. Select one of the following from the Test Option menu:

- **Quick Check Diagnostics.**—Runs a quick, general test on each device with a minimal number of prompts. If errors occur, they are displayed when the testing is complete. You cannot print or save the error messages.

- **Automatic Diagnostics.**—Runs unattended, maximum testing of each device with minimal prompts. You can choose how many times to run the tests, to stop on errors, or to print or save a log of errors.

- **Prompted Diagnostics**—Allows maximum control over testing the devices. You can choose attended or unattended testing, decide to stop on errors, or choose to print or save a log of errors.

10. Follow the instructions on the screen as the devices are tested.

When testing is complete, the Test Option menu appears.

11. Exit the Test Option menu.

12. Exit the Diagnostics menu.

## View System Information (INSPECT)

The View System Information (INSPECT) utility provides information about the computer and installed or connected devices. You can display, print, or save the information.

Follow these steps to run View System Information (INSPECT) from the Compaq Diagnostics diskette:

1. Turn on the external devices that you want to test. Connect the printer if you want to print the information.
2. Insert the Compaq Diagnostics diskette into drive A.
3. Turn on or restart the computer.

The computer starts from drive A, and the Diagnostics Welcome screen appears.

4. Press **Enter** to continue.

The Diagnostics menu appears.

5. Select View System Information (INSPECT) from the Diagnostics menu.

6. Select the item you want to view from the following list:

System	Memory
ROM	Audio
Keyboard	Operating system
System ports	System files
System storage	Windows files
Graphics	

7. Follow the instructions on the screen to cycle through the screens, to return to the list and choose another item, or to print the information.

## **Intelligent Manageability**

Intelligent Manageability combines innovative hardware technology with Enterprise Management and PC LAN management solutions from Compaq and other leading vendors to make Compaq portable computers easier to inventory, troubleshoot, and protect.

If the Intelligent Manageability software is not preinstalled on your computer, contact your Compaq authorized dealer or reseller, or call Compaq Customer Support at the number listed in the Preface of this guide.

## **Asset Management**

AssetControl is asset management software designed to cut the time and cost of conducting a physical inventory of personal computers, key components, and monitors. AssetControl is preinstalled on portable computers, key components, and monitors that support the Video Electronics Standards Association Data Display Channel (VESA DDC) and Extended Display Identification Data (EDID) standards.

AssetControl features make it easy and inexpensive to maintain an accurate, up-to-date inventory. Detailed inventory information, including manufacturer, model, serial number, asset tag, and ROM revision level can be viewed, printed, or saved electronically using Compaq Insight Personal Edition.

Compaq Insight Personal Edition refers to Intelligent Manageability software that diagnoses portable computer hardware, monitors the internal system temperature and IntelliSafe hard drive, and then displays a prefailure warning message on detecting a system temperature or hard drive fault.

## **Fault Management**

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Compaq Insight Personal Edition displays a pop-up message to notify you when a hard drive or system temperature fault is detected. If the computer is connected to a network managed by Compaq Insight Manager, fault notices are also sent to the network management application.

## Security Management

The security management utility provides a set of security features to protect the computer and data from unauthorized access.

- Passwords—Prevents unauthorized access to information stored on the computer or network.
- Drive security—Prevents starting the computer from the diskette drive and reading information from the diskette drive.
- Device disabling—Prevents unauthorized data transfer over fax/modems, serial ports, parallel ports, and infrared ports.

Refer to Chapter 10, "Running Computer Setup," for information on establishing setup and power-on passwords.

## Troubleshooting

If you have a problem with your computer, you may be able to solve it easily with the aid of this chapter and the online Troubleshooting help. This chapter provides a brief checklist for solving minor problems and a list of possible problems and solutions for the following topics:

- |                           |   |
|---------------------------|---|
| ■ Audio                   | ■ Keyboard                              |
| ■ Battery/Battery Gauge   | ■ Memory                                |
| ■ CD-ROM Drive            | ■ PC Card (PCMCIA)                      |
| ■ Diskette/Diskette Drive | ■ Pointing device                       |
| ■ Hard Drive              | ■ Power                                 |
| ■ Hardware                | ■ Printer                               |
| ■ Infrared                | ■ Screen (display and external monitor) |

For online Troubleshooting help, click the Start button, click Help, click the Contents tab, then double-click Troubleshooting. Double-click the type of problem you are having, and a troubleshooter asks questions to help identify and solve the problem. (The online *Compaq Troubleshooting* provides information similar to that provided in this chapter.)

For a list of possible error messages during the Power-On Self-Test (POST), see Appendix A.

**NOTE:** A message on the screen does not necessarily mean that an error condition exists. It may be nothing more than an information message about what the computer is doing, or a prompt reminding you to enter information or press a key.

If you are unable to solve a problem with the troubleshooting tips in this chapter and the online Troubleshooting help, follow the instructions in Chapter 11, "Running Compaq Diagnostics", to run Computer Checkup from the Compaq Diagnostics diskette. If you find it necessary to call technical support, you will be asked for the printed Computer Checkup error message log or for a list of the error messages. Refer to "Compaq Support" in the Preface of this guide for information about calling Compaq.

## Checklist for Minor Problems

If you encounter some minor problem with your computer or software, go through the following checklist for possible solutions.

- Is the computer turned on (the power light and power icon are on)?
- Is the computer connected to an external power source, or does it have a fully charged battery installed?
- Are all cables connected properly and securely?
- Have you installed all device drivers needed for new equipment? Did you double-click the Add New Hardware icon or the Printers icon in Control Panel for help installing new equipment that is not Plug and Play?
- Did the computer boot from a hard drive that has the LTE 5000 software necessary to access all the computer resources?
- If the problem appears related to software, have you read the software documentation?
- Have you scanned the computer for viruses?



## Solving Audio Problems

Problem	Probable Cause	Solution(s)
Computer beeps once after you turn it on.	This is typical; it indicates successful completion of the Power-On Self-Test (POST).	No action is required.
Computer does not beep after the Power-On Self-Test (POST).	Speaker volume is off or is turned down.	If the speaker icon is not visible on the status panel, press the <b>Fn+F5</b> hotkey to turn the speakers on, then adjust the volume.
Computer is beeping and battery light is blinking.	Battery charge is low.	<p>Immediately save any open file(s). Then do any one of the following:</p> <ul style="list-style-type: none"> <li>■ Connect the computer to an external power source to charge the battery pack.</li> <li>■ Initiate Suspend and replace the battery pack with a fully charged battery pack.</li> <li>■ Turn the computer off or initiate Hibernation until you can find another power source or charge the battery pack.</li> </ul>
Computer does not beep to indicate a low-battery condition.	Warning beeps are disabled.	Run Computer Setup and enable the low-battery warning beeps on the Power menu (refer to Chapter 10, "Running Computer Setup").
	Speaker volume is off or is turned down.	If the speaker icon is not visible on the status panel, press the <b>Fn+F5</b> hotkey to turn the speakers on, then adjust the volume.
Volume is too low or too loud.	The computer volume control and/or the software volume control needs to be adjusted.	Adjust the computer volume control or the volume control in Multimedia Properties.
Internal speakers produce no sound.	Speaker volume is off or is turned down.	If the speaker icon is not visible on the status panel, press the <b>Fn+F5</b> hotkey to turn the speakers on, then adjust the volume.
	External speakers or headphones are connected to the computer, or the computer is docked in one of the expansion bases.	<p>Use the external notebook speakers or headphones or the expansion base speakers.</p> <p>To use the internal speakers, disconnect the external speakers or headphones or undock the computer.</p>

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# Solving Battery and Battery Gauge Problems

"Solving Power Problems" in this chapter may also be helpful.

Problem	Probable Cause	Solution(s)
Computer won't turn on when battery pack is inserted and power cord is unplugged.	Battery is discharged.	Connect the computer to an external power source and charge the battery pack.
		Replace the battery pack with a fully charged battery pack.
Computer is beeping and battery light is blinking.	Battery charge is low.	Immediately save any open files and do one of the following: <ul style="list-style-type: none"><li>■ Connect the computer to an external power source to charge the battery pack.</li><li>■ Initiate Suspend and replace the battery pack with a fully charged battery pack.</li><li>■ Turn the computer off or initiate Hibernation until you can find another power source or charge the battery pack.</li></ul>
Computer battery light blinks to indicate low battery condition, but computer does not beep.	Low battery warning beeps are disabled.	Run Computer Setup and enable low-battery warning beeps on the Power menu (refer to Chapter 10, "Running Computer Setup").
	Volume is turned off or turned down too low.	If the speaker icon is not visible on the status panel, press the <b>Fn+F5</b> hotkey to turn the speaker on, then adjust the volume.

*Continued*

## Solving Battery and Battery Gauge Problems *Continued*

Problem	Probable Cause	Solution(s)
Battery light does not turn on and battery pack does not charge.	Battery pack is already charged.	No action is required.
	Battery pack was exposed to temperature extremes.	Allow time for the battery pack to return to room temperature.
	Battery pack is at end of its life.	Replace battery pack.
Battery pack is warm to the touch after charging.	Normal warming has occurred due to charging.	No action is required.
Battery gauge is inaccurate.	The battery pack is new or has not been used for a long time.	Condition the battery pack by fully charging, fully discharging, then fully recharging it.
The computer shut down and information in memory was lost when a battery pack was being replaced.	Suspend was not initiated before removing the discharged battery pack, or a charged battery pack was not inserted within ten minutes after removing the discharged battery pack.	To prevent loss of information next time, initiate Suspend, remove the discharged battery pack, and insert a fully charged battery pack within ten minutes.
	Auxiliary battery charge is low because the computer was not connected to a power source for an extended period of time.	Connect the computer to an external power source to charge the auxiliary battery.
	Auxiliary battery is at end of its life.	Replace the auxiliary battery.
You have to set the date and time every time you turn on the computer.	Auxiliary battery is at end of its life.	Replace the auxiliary battery.

*Continued*

## Solving Battery and Battery Gauge Problems *Continued*

Problem	Probable Cause	Solution(s)
Battery pack operating time is far less than the documented average operating time.	Power management is turned off or disabled.	Enable power management in Computer Setup and in Windows Power Properties (refer to Chapter 10). The power management icon should be visible on the status panel.
	An external device or PC Card is draining the battery.	Turn off or disconnect external devices when not using them.
	Battery pack has partially self-discharged.	Condition the battery pack by fully charging, fully discharging, then fully recharging it.  To maintain the charge, leave battery packs in the computer when it is connected to external power.  If the computer is disconnected from external power for more than two weeks, remove battery packs from the computer to reduce the discharge rate.
	Battery pack is being exposed to high temperatures or extremely cold temperatures.	Keep the battery pack within the recommended temperature ranges. operating: 50°F to 104°F (10°C to 40°C) storage: -4°F to 86°F (-20°C to 30°C ).  Recharge the battery pack.
	Battery is not being used to low-battery condition.	Use the battery until the computer gives low-battery warning.

## Solving CD-ROM Drive Problems

Problem	Probable Cause	Solution(s)
CD-ROM drive cannot read a compact disc.	Compact disc is upside down or is improperly inserted in the CD-ROM drive.	Open the CD loading tray, place the compact disc in it (label side up), then close the tray.
CD-ROM drive does not work.	CD-ROM drive is not seated properly.	Shut down the computer, remove and reinsert the drive, then turn on the computer.
	CD-ROM drive was inserted while the computer was on, in Suspend, or in Hibernation.	Shut down computer; then turn it on again. The drive is initialized during power up.
No sound comes from a CD-ROM drive in the expansion base.	You have two CD-ROM drives in the expansion base and are trying to play an audio (music) CD on one of them.	Shut down the computer and remove one of the CD-ROM drives from the expansion base. If two CD-ROM drives are in the expansion base, neither can play audio (music) CDs.

## Solving Diskette and Diskette Drive Problems

Problem	Probable Cause	Solution(s)
Cannot access diskette drive.	Diskette drive is not seated properly.	Shut down the computer, remove and reinsert the diskette drive, then turn on the computer.
Cannot access diskette drive in expansion base	Real mode device drivers have not been loaded.	Remove the check marks from the docked and undocked configurations in Standard Floppy Disk Controller Properties to unload the protected mode drivers and then restart the computer. (Refer to Chapter 6, "Working with Removable Drives", for information on accessing a diskette drive in the expansion base.)
Diskette drive icon stays on.	Diskette is damaged.	Run the Windows ScanDisk program.
Diskette drive cannot write to a diskette.	Diskette is write-protected.	Disable the diskette's write-protect feature or use a diskette that is not write-protected.
	Diskette is not formatted.	Double-click the My Computer icon, click the icon for the disk you want to format, click the File menu, then click Format.
	Diskette has a bad sector.	Run the Windows ScanDisk program. Copy files to hard drive or another diskette and reformat the diskette.
	Drive error has occurred.	Click the Device Manager tab in System Properties, then double-click Disk Drives and verify the diskette drive is recognized. Double-click the diskette drive to view the status and settings for the drive.  Run Computer Checkup from the Compaq Diagnostics diskette (Refer to Chapter 11, "Running Compaq Diagnostics").

*Continued*

## Solving Diskette and Diskette Drive Problems *Continued*

Problem	Probable Cause	Solution(s)
Diskette drive cannot read a diskette.	The wrong type diskette is being used.	Use the type diskette required by the drive.
	Diskette is defective or damaged.	If you can read other diskettes in the drive, try reading this diskette in another diskette drive to verify it is damaged.
	Diskette is not formatted.	Double-click the My Computer icon, click the icon for the disk you want to format, click the File menu, then click Format.
	Drive error has occurred.	Click the Device Manager tab in System Properties, then double-click Disk Drives and verify the diskette drive is recognized. Double-click the diskette drive to view the status and settings for the drive.  Run Computer Checkup from the Compaq Diagnostics diskette (refer to Chapter 11, "Running Compaq Diagnostics").
Cannot boot from diskette.	Bootable diskette is not in drive A.	Put the bootable diskette in drive A. If a diskette drive is in the computer MultiBay, that is drive A.
	Diskette Boot is disabled in Computer Setup.	Run Computer Setup and enable Diskette Boot on the Initialization menu.

## Solving Hard Drive Problems



**CAUTION:** To prevent loss of information in case of errors or failures, maintain an up-to-date backup of your hard drive at all times.

Problem	Probable Cause	Solution(s)
Reading hard drive takes a long time after starting the computer.	System is restoring from Hibernation.	Give the system time to restore the saved data to its exact state before Hibernation.
Cannot access hard drive.	Hard drive is not seated properly.	Shut down the computer, remove and reinsert the hard drive, then turn on the computer.
	Hard drive was inserted while computer was on, in Suspend, or in Hibernation.	Shut down computer; then turn it on again. The hard drive is initialized during power up.
	Hard drive may be damaged.	Try inserting another removable drive, if the hard drive is in the MultiBay.
		Contact your Compaq authorized service provider.
Hard drive error occurs.	Hard drive has bad sectors or has failed.	Click the Device Manager tab in System Properties, double-click Disk Drives and verify the hard drive is recognized. Double-click the hard drive to view the status and settings for the drive.
		Run Computer Checkup from the Compaq Diagnostics diskette (refer to Chapter 11).
		Refer to Appendix A for Power-On Self-Test error messages.
	Hard drive may be damaged.	Insert another removable drive, if the hard drive is in MultiBay. Contact your Compaq authorized service provider.

*Continued*



Problem	Probable Cause	Solutions(s)
Errors occur after booting from an additional hard drive.	Additional hard drive does not have the LTE 5000 software.	Boot from the original LTE 5000 hard drive or a hard drive that has been prepared with the LTE 5000 software.
Computer does not restart after additional hard drive is inserted.	Additional hard drive is inserted in a secondary drive bay and does not have secondary drive capability.	Verify that the additional drive has the secondary-drive icon or is inserted in a primary drive bay (refer to Chapter 6, "Working With Removable Drives").
Hard drive cannot be removed.	Screw has been inserted to secure drive in computer bay.	Remove the screw from the bottom of the computer (refer to Chapter 6, "Working With Removable Drives").

Problem	Probable Cause	Solutions(s)
A new device is not recognized as part of the computer system.	Cable(s) of new external device are loose or power cables are unplugged.	Ensure that all cables are properly and securely connected.
	Power switch of new external device is not turned on.	Shut down the computer, turn on the external device, then turn on the computer to integrate the device with the computer system.
	Removable drive is not seated properly.	Shut down the computer, remove and reinsert the drive, then turn on the computer.
	Device is not Plug and Play.	Double-click the Add New Hardware icon in Control Panel for help installing the device.

## Solving Infrared Problems

Problem	Cause	Solution(s)
Cannot link with another computer.	Microsoft Direct Cable Connection is not running on both computers.	Install the Microsoft Direct Cable Connection on the second computer and start the program on both computers.
	Baud rate conflict.	Select the same baud rate for both computers.
	Interrupt request (IRQ) conflict.	Check for IRQ conflicts in System Properties Device Manager and in Computer Setup. Reassign if two devices have the same IRQ address.
	A physical condition exists that affects the connection.	Refer to the solutions below for data transmission problems.
Cannot transmit data.	Direct sunlight, fluorescent light, or flashing incandescent light is close to the infrared connections.	Remove the interfering light sources.
	Interference from other wireless devices.	Keep remote control units such as wireless headphones and other audio devices away from the infrared connections.
	Physical obstruction.	Do not place objects between the two units that will interfere with a line-of-sight data transmission.
	Movement.	Do not move either unit during data transmission.
	Orientation.	Adjust devices so that they point within 30 degrees of each other.
	Distance.	Verify that devices are not more than 3 feet (1 m) apart.

## Solving Keyboard Problems

Problem	Probable Cause	Solution(s)
Keyboard is locked.	You initiated QuickLock.	Enter your password to exit QuickLock.
Embedded numeric keypad on computer keyboard is disabled.	Num Lock function is not enabled.	Press the <b>Fn+NumLk</b> keys to enable the Num Lock function and embedded numeric keypad. The Num Lock icon on the status panel turns on (refer to Chapter 2, "Keyboard and EasyPoint II Pointing Device").

## Solving Memory Problems

Problem	Probable Cause	Solution(s)
Memory count during Power-On Self-Test (POST) is incorrect.	Optional memory expansion board is installed incorrectly or is defective.	Ensure that the optional memory expansion board is installed correctly (refer to Chapter 9, "Installing an Optional Memory Expansion Board").
"Out of Memory" message is displayed on the screen or insufficient memory error occurs during operation.	System ran out of memory for the application.  Too many programs are open.	Refer to the application documentation for memory requirements.  Install additional memory.  Close any programs that you do not need

## Solving PC Card Problems

Problem	Probable Cause	Solution(s)
When the computer is on, it does not beep when a PC Card is inserted.	Card is not fully inserted into the slot or is not inserted properly.	Be sure the card is inserted right side up, is aligned properly within the slot, and is fully inserted (refer to Chapter 7, "Using PC Cards").
	PC Card beeps are disabled.	Double-click the PC Card icon in Control Panel, click the Global Settings tab, then enable PC Card sound effects.
	Speakers are turned off or volume is turned down.	If the speaker icon is not visible on the status panel, press the <b>Fn+F5</b> hotkey to turn the speakers on, then adjust the volume control.
	The PC Card slots are disabled.	Run Computer Setup and enable PC Card slots on the Security menu (refer to Chapter 10, "Running Computer Setup").  Click the Device Manager tab in System Properties, double-click PCMCIA socket, then double-click the PC Card controller. If no check marks are in the boxes next to the docked and undocked configurations under Device Usage, click the boxes to add check marks.
	PC Card or card driver is not PCMCIA compliant.	Contact your Compaq authorized dealer, reseller, or service provider for a list of PC Cards tested successfully in Compaq PC Card computers.
When the computer is on, it beeps only once when a PC Card is inserted.	The PC Card is recognized but is not properly configured.	The card may need card-specific drivers or formatting (refer to Chapter 7, "Using PC Cards").

*Continued*

Problem	Cause	Solution(s)
Computer beeps twice but PC Card modem, fax, or network card does not work.	Telephone cord is not plugged in all the way.	Verify that the telephone connection is secure.
	Card-specific drivers for network card are not installed.	Install card-specific drivers (refer to Chapter 7, "Using PC Cards").
	Network server is unavailable.	Contact system administrator.
Computer beeps twice when a storage card is inserted, but the card does not work.	You are trying to access the storage card using the wrong drive letter.	Click the Device Manager tab in System Properties, double-click the storage card, then click the Settings tab and verify the letter assigned to the card.

Problem	Cause	Solution(s)
External pointing device does not work.	Incorrect device driver or no device driver is installed.	Double-click the Add New Hardware icon in Control Panel to install driver.
Integrated pointing device does not work.	An external pointing device is connected and the system has disabled the internal pointing device.	Initiate Suspend and disconnect the external pointing device.

## Solving Power Problems

Also see "Solving Battery and Battery Gauge Problems" in this chapter.

Problem	Probable Cause	Solution(s)
Computer will not turn on.	Computer is not connected to a power source.	Insert a battery pack or connect an external power source.
	Battery pack in computer is discharged.	Insert a fully charged battery pack or connect an external power source.
	Power cords to the external power source are unplugged.	Ensure that power cords connecting the computer and the external power source are plugged in properly.
The Computer turned off while it was left unattended and the status panel is off.	Computer initiated Hibernation after a preset timeout.	Turn on the computer
	Computer initiated Hibernation because of a critical low-battery condition.	Replace the battery pack with a fully charged battery pack or connect an external power source. Then turn on the computer..
Computer initiated Suspend automatically or turned off automatically when it was docked in the expansion base.	The maximum operating temperature was exceeded.	Computer is in an exceedingly hot environment and the fan was not able to cool it adequately. Let the computer cool down, then turn it on again.
	Fan may be blocked, causing computer to exceed the maximum operating temperature.	Make sure the ventilation intake and exhaust are not obstructed. If problem persists, contact your Compaq authorized service provider.

## Solving Printer Problems

If you experience problems printing, run a printer self-test. Refer to the documentation provided with your printer for instructions. If the self-test fails, it is a printer-specific problem. Also refer to the printing section of your application documentation.

Problem	Probable Cause	Solution(s)
Printer will not turn on.	The signal cable may not be connected properly, or the printer is unplugged.	Ensure that the signal cable is properly connected and that the power cord is connected to the electrical outlet.
Printer will not print.	Printer is not turned on or is offline.	Turn the printer on and set it to online.
	Correct printer driver is not installed.	Double-click the Printer icon in Control Panel to add a new printer. Also refer to the printer documentation.
	Printer that is set up for a network is not connected to the network.	Connect the printer to the network.
	Printer cable is too long, unshielded, or defective.	Replace the cable.
	Paper tray is empty.	Fill the paper tray with paper and set the printer to online.
Printer prints garbled information.	Correct printer driver is not installed.	Double-click the Printer icon in Control Panel to add a new printer. Also refer to the printer documentation.
	Cable is not connected properly.	Ensure that the printer signal cable is properly connected to the computer.
	Cable is damaged.	Replace the cable.

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# Solving Screen Problems

This section lists some common causes and solutions for computer display and external monitor problems

You can perform a monitor self-test on an external color or monochrome monitor by disconnecting the monitor from the computer. To do so, complete the following steps:

- 1. Switch to the internal display (**Fn+F4**).
- 2. Turn off the external monitor.
- 3. Disconnect the external monitor signal cable from the computer.
- 4. Turn on the monitor and allow it to warm up for one minute.

The screen should be white. A narrow black border may also appear on the left and right sides of the display. Either of these displays indicates that the monitor is working properly.

Problem	Probable Cause	Solution(s)
Characters are dim.	The brightness or contrast control is not set properly.	Adjust the control(s) on the right side of the computer display.
	Screen is in direct light.	Tilt display or move computer.
Screen is blank.	Screen save was initiated after Power Management screen timeout (period of inactivity).	Press any key or click the mouse.
	You have another screen blanking utility installed.	Press any key and/or enter your password.
	Suspend was initiated.	Press Suspend button to exit Suspend.
	You initiated QuickLock/QuickBlank.	Enter your password to exit QuickLock/QuickBlank.
	The brightness and contrast (if applicable) needs adjusting.	Adjust the control(s) on the right side of the computer display.
	Display switch is stuck.	Tap the switch.
	You disconnected an external monitor, and display setting in Computer Setup is External, or you disconnected the monitor while the computer was on or in Suspend.	Press the <b>Fn+F4</b> hotkey to switch to the internal display.

*Continued*



Problem	Probable Cause	Solution(s)
Screen is blank (continued).	You disconnected an external monitor while the computer was on or in Suspend, and the settings for resolution and colors are not the same for both displays.	If the <b>Fn+F4</b> hotkey does not switch to the internal display, restart the computer.
Computer screen is blank and the screen on an external monitor displays information.	Display was switched to the external monitor.	Press the <b>Fn+F4</b> hotkey to display information on the computer screen.
Display on an external monitor is distorted.	Incorrect display device drivers are installed or incorrect resolution is set.	Double-click the Display icon in Control Panel, click the Settings tab, and set the correct display type and resolution for the external monitor.
	The external monitor is not Energy Star compliant, but the Computer Setup Power Saving Monitor option or the Windows Energy Star compliant option is enabled.	<ol style="list-style-type: none"> <li>1. Press any key or move the pointing device to restore the display.</li> <li>2. If display remains distorted, turn the monitor off, then on again.</li> <li>3. Disable the Computer Setup Power Saving Monitor option and the Windows Energy Star compliant option.</li> </ol>
Small red, green, or blue spots appear on the computer TFT display.	Small spots, called on-pixels, often appear on TFT screens. Compaq limits the number of these on-pixels to 0.003 percent of the approximately 1 million transistors that are on a 10.4-inch display.	This is typical; no action is required.
When in MS-DOS mode, the image on the computer display does not fill the screen.	By default, to maintain a high-quality image, the 800 × 600 models do not stretch the lower-resolution image of MS-DOS mode to fill the screen.	If <b>Fn+T</b> does not clear the problem, contact your authorized dealer or reseller.

## Power-On Self-Test Error Messages

This chapter contains typical error messages that you may encounter during the Power-On Self-Test (POST). POST is a series of tests that run every time you turn on the computer. POST verifies that the system is configured and functioning properly. A successful POST is followed by one or two short beeps.

If you receive an error message listed below, follow the recommended action. If you receive an error message that is not listed, contact your Compaq authorized service provider. You may also want to run Computer Checkup from the Compaq Diagnostics diskette. Refer to Chapter 10, "Running Computer Checkup," for information about setting up your computer.

If POST detects an error, one of the following events occurs:

- A message with the prefix "WARNING" appears informing you where the error occurred. The system pauses until you press F1 to continue.
- A message with the prefix "FATAL" appears informing you where the error occurred. After the message, the system emits a series of audible beeps. The system then stops.
- The system emits a series of audible beeps. The system then stops.

Warning messages indicate a potential problem exists such as a system configuration error. When **F1** is pressed, the system should resume. You should be able to correct problems that produce WARNING messages.

**IMPORTANT:** When a WARNING message includes the prompt to "RUN SCU," you should run Computer Setup (Computer Setup replaced the SCU utility).

Fatal errors emit a beep and may display a FATAL message. Fatal errors indicate severe problems, such as a hardware failure. Fatal errors do not allow the system to resume. Some of the Fatal error beep codes are listed at the end of this appendix.

## Warning Messages

Message:	CLOCK NOT TICKING CORRECTLY
Description:	The real time-clock is not ticking.
Message:	CMOS CHECKSUM INVALID - RUN SCU
Description:	CMOS RAM Information has been corrupted and needs to be reinitialized by running Computer Setup.
Message:	CMOS FAILURE - RUN SCU
Description:	CMOS RAM has lost power and needs to be reinitialized by running Computer Setup.
Message:	COLOR/MONO SWITCH INCORRECT
Description:	The COLOR/MONO switch on the system board is incorrect for the installed hardware.
Message:	FLOPPY CONTROLLER FAILED
Description:	The diskette (floppy) controller failed to respond to the reset command. Turn off the computer and verify that the diskette drive is fully seated in the drive bay.
Message:	FLOPPY DISK TRACK 0 FAILED
Description:	The floppy drive cannot read track 0 of the floppy disk in the drive. Try another diskette. If the problem persists, you may need to replace the floppy drive.
Message:	FLOPPY INFORMATION INVALID - RUN SCU
Description:	The drive parameters stored in CMOS do not match the floppy drives detected in the system.
Message:	HARD DISK CONTROLLER ERROR
Description:	The hard disk controller failed to respond to the reset command. Turn off the computer and verify that the hard drive is fully seated in the drive bay.
Message:	HARD DISK xx FAILURE (or ERROR)
Description:	A failure or an error occurred when trying to access the hard drive.
Message:	HARDWARE INFO DOES NOT MATCH VIDEO CARD - RUN SCU
Description:	The video adapter type specified in CMOS RAM does not match the installed hardware.
Message:	KEYBOARD CONTROLLER FAILURE
Description:	The keyboard failed the self-test command.

Continued

Message:	KEYBOARD FAILURE
Description:	The keyboard failed to respond to the RESET ID Command.
Message:	NO INTERRUPTS FROM TIMER 0
Description:	The periodic timer interrupt is not occurring.
Message:	RAM PARITY ERROR AT LOCATION xxxx
Description:	A RAM parity error occurred at the specified (hexadecimal) location.
Message:	ROM AT xxxx (LENGTH yyyy) WITH NON-ZERO CHECKSUM (zz)
Description:	An illegal adapter ROM was located at the specified address. An external adapter (such as a video card) may be causing a conflict.
Message:	TIME/DATE CORRUPT - RUN SCU
Description:	The time and date stored in the real time clock have been corrupted, possibly by a power loss.
Message:	UNEXPECTED AMOUNT OF MEMORY - RUN SCU
Description:	The amount of memory detected by POST does not match the amount specified in CMOS RAM.

Fatal Error Messages	
Message:	CMOS RAM TEST FAILED
Description:	A walking bit test of CMOS RAM locations 0E (Hex) - 3F (Hex) failed.
Beep Code:	3
Message:	DMA CONTROLLER FAULTY
Description:	A sequential read/write of the transfer count and transfer address registers within the primary and secondary DMA controllers failed.
Beep Code:	4
Message:	FAULTY DMA PAGE REGISTERS
Description:	A walking bit read/write of the 16 DMA controller page registers starting at location 80 Hex failed.
Beep Code:	0
Message:	FAULTY REFRESH CIRCUIT
Description:	A continuous read/write test of port 61h found that bit 4 (Refresh Detect) failed to toggle within an allotted amount of time.
Beep Code:	1
Message:	INTERRUPT CONTROLLER FAILED
Description:	A sequential read/write of various Interrupt Controller registers failed.
Beep Code:	5
Message:	PARITY ERROR AT UNKNOWN LOCATION
Description:	Parity error occurred.
Beep Code:	None
Message:	RAM ERROR AT LOCATION xxxx
Description:	RAM error occurred during memory test.
Beep Code:	None
Message:	ROM CHECKSUM INCORRECT
Description:	A checksum of the ROM BIOS does not match the byte value at F000:FFFF.
Beep Code:	2

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# Error Beep Codes

The following table lists some of the Fatal Error beep codes, along with the beep sequence (short, long, pause), and the meaning of the beeps.

Beep Code	Beep Sequence	Meaning
0	S-S-S-P-S-S-L-P	DMA page registers are faulty.
1	S-S-S-P-S-L-S-P	Refresh circuitry is faulty.
2	S-S-S-P-S-L-L-P	ROM checksum is incorrect.
3	S-S-S-P-L-S-S-P	CMOS RAM test failed.
4	S-S-S-P-L-S-L-P	DMA controller is faulty.
5	S-S-S-P-L-L-S-P	Interrupt controller failed.
6	S-S-S-P-L-L-L-P	8042 keyboard controller failed.
7	S-S-L-P-S-S-S-P	Graphics adapter is faulty.
8	S-S-L-P-S-S-L-P	Internal RAM is faulty.
S = Short, L = Long, P = Pause		

# Specifications

This appendix provides physical and performance specifications for the computer, display, removable drives, and battery packs.

Computer		
	U.S.	Metric
Dimensions		
Height	2.13 in	5.42 cm
Width	12.20 in	31.00 cm
Depth	9.06 in	23.00 cm
Weight (by model)		
510 CSTN	7.1 lb	3.23 kg
810 CTFT	7.3 lb	3.32 kg
810 CSTN 800 x 600	7.5 lb	3.39 kg
810 CTFT 800 x 600	7.4 lb	3.35 kg
1350 CTFT 800 x 600	7.4 lb	3.35 kg
2160 CTFT 1024 x 768	7.4 lb	3.35 kg
Notebook Size	12.2 x 9 x 2 in	31 x 22.9 x 5.1 cm
Standalone (Battery) Power Requirements		
Nominal Operating Voltage	12 VDC	
Average Operating Power	15 W	
Peak Operating Power	25 W	
AC Adapter Power Requirements		
Operating Voltage	90 to 240 VAC RMS	
Operating Current	0.4 to 0.8 A RMS	
Operating Frequency Range	47 to 63 Hz AC	
Maximum Transient	1kV for 50ns	
Automobile Adapter DC Input Requirements		
Operating Voltage	10 to 24 VDC	
Operating Power	30 to 40 W	

Continued

<b>Temperature</b>		
Operating	50 to 95° F	10 to 35° C
Nonoperating	-4 to 140° F	-20 to 60° C
<b>Relative Humidity (noncondensing)</b>		
Operating	10 to 90%	
Nonoperating ( $t_W = 38.7^\circ\text{C max}$ )	5 to 95%	
<b>Maximum Altitude (unpressurized)</b>		
Operating	10,000 ft	3.05 km
Nonoperating	30,000 ft.	9.14 km
<b>Shock</b>		
Operating	10 G, 11 ms, half sine	
Nonoperating	240 G, 2 ms, half sine	
<b>Vibration</b>		
Operating	0.5 G	
Nonoperating	1.5 G	



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10.4-Inch Color TFT SVGA Display		
	U.S.	Metric
Dimensions		
Height	6.24 in	15.84 cm
Width	8.32 in	21.13 cm
Number of Colors	256, 32K, 64K	
Contrast Ratio	100:1	
Brightness	70 CD/M <sup>2</sup> @ 4.2 mA	
Pixel Resolution		
Pitch	0.264 × 0.264 mm	
Format	800 × 600	
Configuration	RGB Stripe	
Backlight	Edge Lit	
Character Display	80 × 25	
Total Power Consumption	4.0 W	
11.3 Inch Color STN SVGA Display		
	U.S.	Metric
Dimensions		
Height	6.80 in	17.28 cm
Width	9.07 in	23.04 cm
Number of Colors	256	
Contrast Ratio	25:1	
Brightness	70 CD/M <sup>2</sup> @ 3.5 mA	
Pixel Resolution		
Pitch	0.288 × 0.288 mm	
Format	800 × 600	
Configuration	RGB Stripe	
Backlight	Edge Lit	
Character Display	80 × 25	
Total Power Consumption	3.8 W	

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11.3-Inch Color TFT SVGA Display		
	U.S.	Metric
Dimensions		
Height	6.88 in	17.48 cm
Width	9.15 in	23.24 cm
Number of Colors	64K	
Contrast Ratio	100:1	
Brightness	70 CD/M <sup>2</sup> @ 4 mA	
Pixel Resolution		
Pitch	0.288 x 0.288 mm	
Format	800 x 600	
Configuration	RGB Stripe	
Backlight	Edge Lit	
Character Display	80 x 25	
Total Power Consumption	3.7 W	
12.1-Inch Color TFT SVGA Display		
	U.S.	Metric
Dimensions		
Height	7.26 in	18.45 cm
Width	9.68 in	24.6 cm
Number of Colors	64K	
Contrast Ratio	100:1 (typical)	
Brightness	70 CD/M <sup>2</sup> @ 4 mA	
Pixel Resolution		
Pitch	0.3075 x 0.3075 mm	
Format	800 x 600	
Configuration	RGB Stripe	
Backlight	Edge Lit	
Character Display	80 x 25	
Total Power Consumption	3.9 W	

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12.1-Inch Color TFT 1024x768 Display		
	U.S.	Metric
Dimensions		
Height	7.26 in	18.43 cm
Width	9.68 in	24.58 cm
Number of Colors	Panel: 256K	
	System: 256	
Contrast Ratio	100:1	
Brightness	70 CD/M <sup>2</sup> @ 5 mA	
Pixel Resolution		
Pitch	0.24 x 0.24 mm	
Format	1024 x 768	
Configuration	RGB Stripe	
Backlight	Edge Lit	
Character Display	80 x 25	
Total Power Consumption	4.5 W	

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Hard Drive			
	810 MB	1.35 GB	2.16 GB
Capacity per Drive	808.2 MB	1.35 GB	2.16 GB
Drive Type	65	65	N/A
Drive Height	2.5 in	2.5 in	17 mm
Transfer Rate			
Host/Interface (MBytes/sec)	8.33	16.6	16.6
Media (Mbits/sec)	24.9 to 36.0	24.7 to 44.9	48.7 to 74.5
Sector Interleave	1:1	1:1	1:1
Seek Times (Typical, Including settling)			
Track-to-track	4 ms	3 ms	4 ms
Average	15 ms	13 ms	12 ms
Maximum	24 ms	25 ms	16 ms
Disk Rotational Speed	4200	4200	4900
Physical Configuration			
Cylinders	2360	2920	4200
Heads	8	10	
Bytes per sector	512	512	
Logical Configuration			
Cylinders	1571	2633	4200
Heads	16	16	16
Sectors per track	63	63	63
Bytes per sector	512	512	512
Buffer Size	128 K	128 K	96 K

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Diskette Drive	
Diskette size	3.5-inch
High density	1.44-MB/1.2 MB
Low density	720 KB
Light	None
Height	0.59 in (1.5 cm)
Bytes per sector	512
Sectors per track	
High density	18 (1.44-MB)/15 (1.2-MB)
Low density	9
Tracks per side	
High density	80 (1.44-MB)/80 (1.2-MB)
Low density	80
Read/Write heads	2
Access times	
Track-to track (high/low)	3 ms
Average (high/low)	95 ms
Settling time	15 ms
Latency average	100 ms

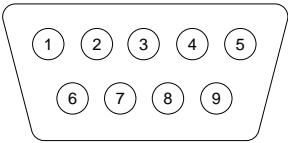
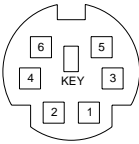
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6X CD-ROM Drive	
Weight	
Applicable Disc	CD Digital Audio CD-ROM Mode 1, Mode 2 CD-ROM XA Mode 2 (Form 1, Form 2) Photo CD (single/multi-session)
Center hole diameter	15 mm
Disc diameter	12 cm, 8 cm
Rotational speed	1200-3180 rpm
Disc thickness	1.2 mm
Track pitch	1.8 um
Laser	
Beam divergence	11 ( vertical/37 (horizontal) degrees
Output power	5 mW
Type	AlGaAs double-hetero visible lser diode Wave
Wave length	785 nm
Access time (typical, including settling)	
Random	190 ms
Full stroke	450 ms
Audio output level	
Line out	0.85 Vrms +/-3 dB (into 47K ohm, ATT=0)
Headphone	N/A
Cache buffer	128 KB
Data transfer rate (typical, including settling)	
Sustained	900 KB/sec
Asynchronous	16.7 MB/sec
Startup time (typical)	8 seconds



Nickel Metal Hydride Battery Pack		
	U.S.	Metric
Dimensions		
Height	0.75 in	1.9 cm
Width	3.94 in	10.0 cm
Depth	5.55 in	14.1 cm
Weight	1.30 lb	0.59 kg
Energy		
Voltage	12 V	
Capacity	2.5 Ah	
Temperature		
Operating	50°F to 104°F	10°C to 40°C
Storage		
No time limit	-4°F to 86°F	-20°C to 30°C
No longer than 3 months	-4°F to 104°F	-20°C to 40°C
No longer than 1 year	-4°F to 122°F	-20°C to 50°C
Lithium Ion Battery Pack		
	U.S.	Metric
Dimensions		
Height	0.75 in	1.9 cm
Width	3.94 in	10.0 cm
Depth	5.55 in	14.1 cm
Weight	0.92 lb	0.42 kg
Energy		
Voltage	16.4 V	
Capacity	2.25 Ah	
Temperature		
Operating	50°F to 104°F	10°C to 40°C
Storage		
No time limit	-4°F to 86°F	-20°C to 30°C
No longer than 3 months	-4°F to 104°F	-20°C to 40°C
No longer than 1 year	-4°F to 122°F	-20°C to 50°C

# Connector Pin Assignments

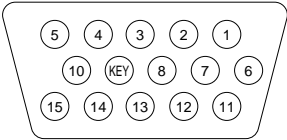
Serial Connector		
Connector	Pin	Signal
	1	Carrier Detect
	2	Receive Data
	3	Transmit Data
	4	Data Terminal Ready
	5	Ground
	6	Data Set Ready
	7	Request to Send
	8	Clear to Send
	9	Ring Indicator
	Case	Ground
Keyboard/Mouse Connector		
Connector	Pin	Signal
	1	Data
	2	Not Connected
	3	Ground
	4	+ 5V
	5	Clock
	6	Not Connected



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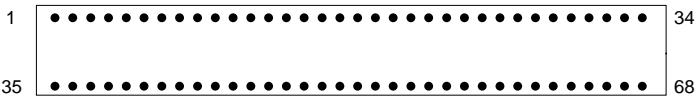
Parallel Connector	
	
Pin	Signal
1	Strobe*
2	Data Bit 0
3	Data Bit 1
4	Data Bit 2
5	Data Bit 3
6	Data Bit 4
7	Data Bit 5
8	Data Bit 6
9	Data Bit 7
10	Acknowledge*
11	Printer Busy
12	Paper Out
13	Printer Select Acknowledge
14	Auto Linefeed*
15	Printer Error*
16	Reset Printer*
17	Printer Select Command*
18	Ground
19	Ground
20	Ground
21	Ground
22	Ground
23	Ground
24	Ground
25	Ground
* = Active low	

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External Monitor Connector		
Connector	Pin	Signal
	1	Red Video Output
	2	Green Video Output
	3	Blue Video Output
	4	Monitor ID Bit 2
	5	Ground
	6	Ground
	7	Ground
	8	Ground
	9	+5 Volts DC
	10	Ground
	11	Monitor ID Bit 0
	12	Monitor ID Bit 1 / Data
	13	Horizontal Sync Control
	14	Vertical Sync Control
	15	Monitor ID Bit 3 / Clock

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PC Card (PCMCIA) Connector



Pin	Signal	Pin	Signal
1	Ground	28	Address bit 1
2	Data bit 3	29	Address bit 0
3	Data bit 4	30	Data bit 0
4	Data bit 5	31	Data bit 1
5	Data bit 6	32	Data bit 2
6	Data bit 7	33	Write protect/IO Port is 16-bit
7	Card enable 1	34	Ground
8	Address bit 10	35	Ground
9	Output enable	36	Card detect 1
10	Address bit 11	37	Data bit 11
11	Address bit 9	38	Data bit 12
12	Address bit 8	39	Data bit 13
13	Address bit 13	40	Data bit 14
14	Address bit 14	41	Data bit 15
15	Program/Write enable	42	Card enable 2
16	Ready or busy/Interrupt request	43	Refresh
17	Power	44	IO Read
18	Programming and peripheral supply 1	45	IO Write
19	Address bit 16	46	Address bit 17
20	Address bit 15	47	Address bit 18
21	Address bit 12	48	Address bit 19
22	Address bit 7	49	Address bit 20
23	Address bit 6	50	Address bit 21
24	Address bit 5	51	Power
25	Address bit 4	52	Programming and peripheral supply 2
26	Address bit 3	53	Address bit 22
27	Address bit 2	54	Address bit 23

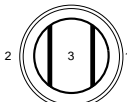
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**PC Card (PCMCIA) Connector** *Continued*

Pin	Signal	Pin	Signal
55	Address bit 24	62	Battery voltage detect 2/Audio digital waveform
56	Address bit 25	63	Battery voltage detect 1/Card status changed
57	5 V Detect	64	Data bit 8
58	Card reset	65	Data bit 9
59	Extend bus cycle	66	Data bit 10
60	Input port acknowledge	67	Card detect 2
61	Register select and IO enable	68	Ground

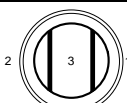
**Stereo Speaker/Headphone Jack**

Connector	Pin	Signal
	1	Ground
	2	Right Channel Output
	3	Left Channel Output

**Mono Microphone Jack**

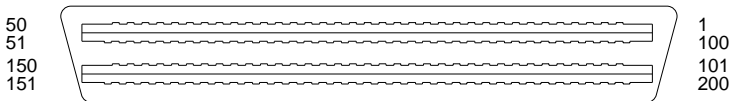
Connector	Pin	Signal
	1	Ground
	2	Power
	3	Microphone Input

**Stereo Line-In Jack**

Connector	Pin	Signal
	1	Ground
	2	Right Channel Input
	3	Left Channel Input

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## External Options Connector



Pin	Signal	Pin	Signal
1	Expansion - SMI (Reserved)	26	System Data Bit 8
2	CRT- Red Video	27	System Data Bit 10
3	Battery 2 Voltage	28	Ground
4	CRT- Blue Video	29	System Data Bit 12
5	CRT- Green Video	30	System Data Bit 14
6	CRT- Vertical Sync	31	System Address Bit 16
7	CRT- Horizontal Sync	32	System Address Bit 20
8	CRT ID bit 3 / Clock	33	Ground
9	Line In- Right Channel	34	16-Bit Memory Cycle
10	Ground	35	Low Memory Read Control
11	VAFC - Overlay Window	36	I/O Bus Ready
12	VAFC - Sync Enable	37	I/O Error Check
13	IDE Active	38	Ground
14	VAFC - Pixel Data 2	39	OSC
15	VAFC - Pixel Data 6	40	Ground
16	Ground	41	Interrupt Request 5
17	VAFC - Pixel Data 10	42	Interrupt Request 10
18	VAFC - Pixel Data 14	43	Interrupt Request 15
19	TV - Composite Sync	44	DMA Request 3
20	Ground	45	DMA Acknowledge 0
21	System Data Bit 0	46	DMA Acknowledge 5
22	System Data Bit 2	47	DMA Acknowledge 7
23	System Data Bit 4	48	NC
24	Ground	49	Mouse Clock
25	System Data Bit 6	50	Keypad - Data / Power

Continued

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**External Options Connector** *Continued*

Pin	Signal	Pin	Signal
51	Reserved	80	System Data Bit 1
52	Mouse Data	81	Ground
53	NC	82	TV - NTSC/PAL Encoding Select
54	NC	83	VAFC - Pixel Data 15
55	NC	84	VAFC - Pixel Data 11
56	DMA Acknowledge 1	85	Ground
57	DMA Request 5	86	VAFC - Pixel Data 7
58	DMA Request 0	87	VAFC - Pixel Data 3
59	Interrupt Request 11	88	Ground
60	Interrupt Request 6	89	VAFC - Dot Clock
61	Interrupt Request 3	90	VAFC - Blanking
62	Ground	91	Ground
63	Bus Master Grab	92	Line In- Left Channel
64	No Wait States	93	Ground
65	DMA Terminate Count	94	Joystick Read Control
66	Low Memory Write Control	95	Joystick Write Control
67	Byte High Enable	96	DC Voltage Input
68	Ground	97	Expansion - Clock (Reserved)
69	System Address Bit 21	98	Battery 2 Voltage
70	System Address Bit 17	99	CRT ID Bit 1 / Data
71	System Data Bit 15	100	Battery 1 Voltage
72	System Data Bit 13	101	Battery 1 Voltage
73	Ground	102	CRT ID Bit 0
74	System Data Bit 11	103	Battery 2 Voltage
75	System Data Bit 9	104	Expansion - Data (Reserved)
76	System Data Bit 7	105	DC Voltage Input
77	Ground	106	MIDI In
78	System Data Bit 5	107	MIDI Out
79	System Data Bit 3	108	Ground

*Continued*

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## External Options Connector *Continued*

Pin	Signal	Pin	Signal
109	Line Out - Right Channel	138	Reset Drive
110	Ground	139	Ground
111	VAFC - Video Clock	140	Interrupt Request 4
112	VAFC - Pixel Data 0	141	Interrupt Request 7
113	Ground	142	Interrupt Request 12
114	VAFC - Pixel Data 4	143	DMA Request 1
115	VAFC - Pixel Data 8	144	DMA Request 6
116	Ground	145	DMA Acknowledge 2
117	VAFC - Pixel Data 12	146	NC
118	MPEG Audio - Clock	147	Expansion Network Enable
119	TV - On Control	148	Expansion I/O Power Down
120	Ground	149	Keyboard Clock
121	System Address Bit 0	150	+ 5V System Output
122	System Address Bit 2	151	+ 5V System Output
123	System Address Bit 4	152	Keyboard Data
124	Ground	153	Expansion Device Ready
125	System Address Bit 6	154	NC
126	System Address Bit 8	155	DMA Acknowledge 6
127	System Address Bit 10	156	DMA Acknowledge 3
128	Ground	157	DMA Request 7
129	System Address Bit 12	158	DMA Request 2
130	System Address Bit 14	159	Interrupt Request 14
131	System Address Bit 18	160	Interrupt Request 9
132	System Address Bit 22	161	Ground
133	Ground	162	System Clock
134	Memory Read Control	163	Ground
135	I/O Read Control	164	DMA Cycle Indicator
136	Refresh	165	16-Bit I/O Cycle
137	Address Latch Enable	166	I/O Write Control

*Continued*

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**External Options Connector** *Continued*

Pin	Signal	Pin	Signal
167	Memory Write Control	184	VAFC - Pixel Data 13
168	Ground	185	Ground
169	System Address Bit 23	186	VAFC - Pixel Data 9
170	System Address Bit 19	187	VAFC - Pixel Data 5
171	System Address Bit 15	188	Ground
172	System Address Bit 13	189	VAFC - Pixel Data 1
173	Ground	190	VAFC - Enable Video
174	System Address Bit 11	191	FDD Active
175	System Address Bit 9	192	Line Out - Left Channel
176	System Address Bit 7	193	Ground
177	Ground	194	Secondary PCMCIA SMI
178	System Address Bit 5	195	Secondary PCMCIA Speaker
179	System Address Bit 3	196	DC Voltage Input
180	System Address Bit 1	197	Secondary PCMCIA Ring-In
181	Ground	198	Power Switch
182	MPEG Audio - Data	199	CRT ID Bit 2
183	MPEG Audio - R/L Channel Select	200	Battery 1 Voltage



## Two-Prong, Double-Insulated Power Cord Set Requirements

Determine whether your AC power cord has a two-prong or three-prong plug. This appendix presents the two-prong power cord requirements. If you have a three-prong plug, go to Appendix E.

The wide-range input or automatic line switching feature of your computer permits it to operate from any line voltage between 100 and 120 or 220 and 240 volts AC.

The power plug or power cord set (appliance coupler, flexible cord, and wall plug) you received with your computer meets the requirements for use in the country where you purchased your computer.

Power cord sets for use in other countries must meet the requirements of the country where you use the computer. For more information on power cord set requirements, contact your Compaq authorized dealer, reseller, or service provider.

### General Requirements

The requirements listed below are applicable to all countries:

1. The length of the power cord set must be at least 6.00 feet (1.8 m) and a maximum of 9.75 feet (3.0 m).
2. All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
3. The power cord set must have a minimum current capacity of 2.5A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system.
4. The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C7 connector, for mating with appliance inlet on the AC Adapter.

.....

## Country-Specific Requirements

Power Cord Set Requirements		
Country	Accredited Agency	Applicable Note Numbers
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	JIS	3
The Netherlands	KEMA	1
Norway	NEMKO	1
Sweden	SEMKO	1
Switzerland	SEV	1
United Kingdom	BSI	1
United States	UL	2

[illegible]

- Two-Prong, Double-Insulated Power Cord Set Requirements
- D-3**

## Three-Prong Grounded Power Cord Set Requirements

Determine whether your AC power cord has a two-prong or three-prong plug. This appendix presents the three-prong power cord requirements. If you have a two-prong plug, go to Appendix D.

The wide-range input or automatic line switching feature of your computer permits it to operate from any line voltage between 100 and 120 or 220 and 240 volts AC.

The power plug or power cord set (appliance coupler, flexible cord, and wall plug) you received with your computer meets the requirements for use in the country where you purchased your computer.

Power cord sets for use in other countries must meet the requirements of the country where you use the computer. For more information on power cord set requirements, contact your Compaq authorized dealer, reseller, or service provider.

### General Requirements

The requirements listed below are applicable to all countries:

1. The length of the power cord set must be at least 6.00 feet (1.8 m) and a maximum of 9.75 feet (3.0 m).
2. All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
3. The power cord set must have a minimum current capacity of 10A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system.
4. The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with appliance inlet on the AC Adapter.

.....

## Country-Specific Requirements

Power Cord Set Requirements		
Country	Accredited Agency	Applicable Note Numbers
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	JIS	3
The Netherlands	KEMA	1
Norway	NEMKO	1
Sweden	SEMKO	1
Switzerland	SEV	1
United Kingdom	BSI	1
United States	UL	2

[illegible]

- Three-Prong Grounded Power Cord Set Requirements E-3

# Electrostatic Discharge

A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

## Preventing Electrostatic Discharge

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

## Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm +/- 10 percent resistance in the ground cords. To provide proper grounding, wear the strap snug against the skin.
- Use heelstraps, toestraps, or bootstraps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

**IMPORTANT:** If you do not have the suggested equipment for proper grounding, or if you need more information on static electricity or assistance with product installation, contact your Compaq authorized dealer, reseller, or service provider.



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